

Figure 1

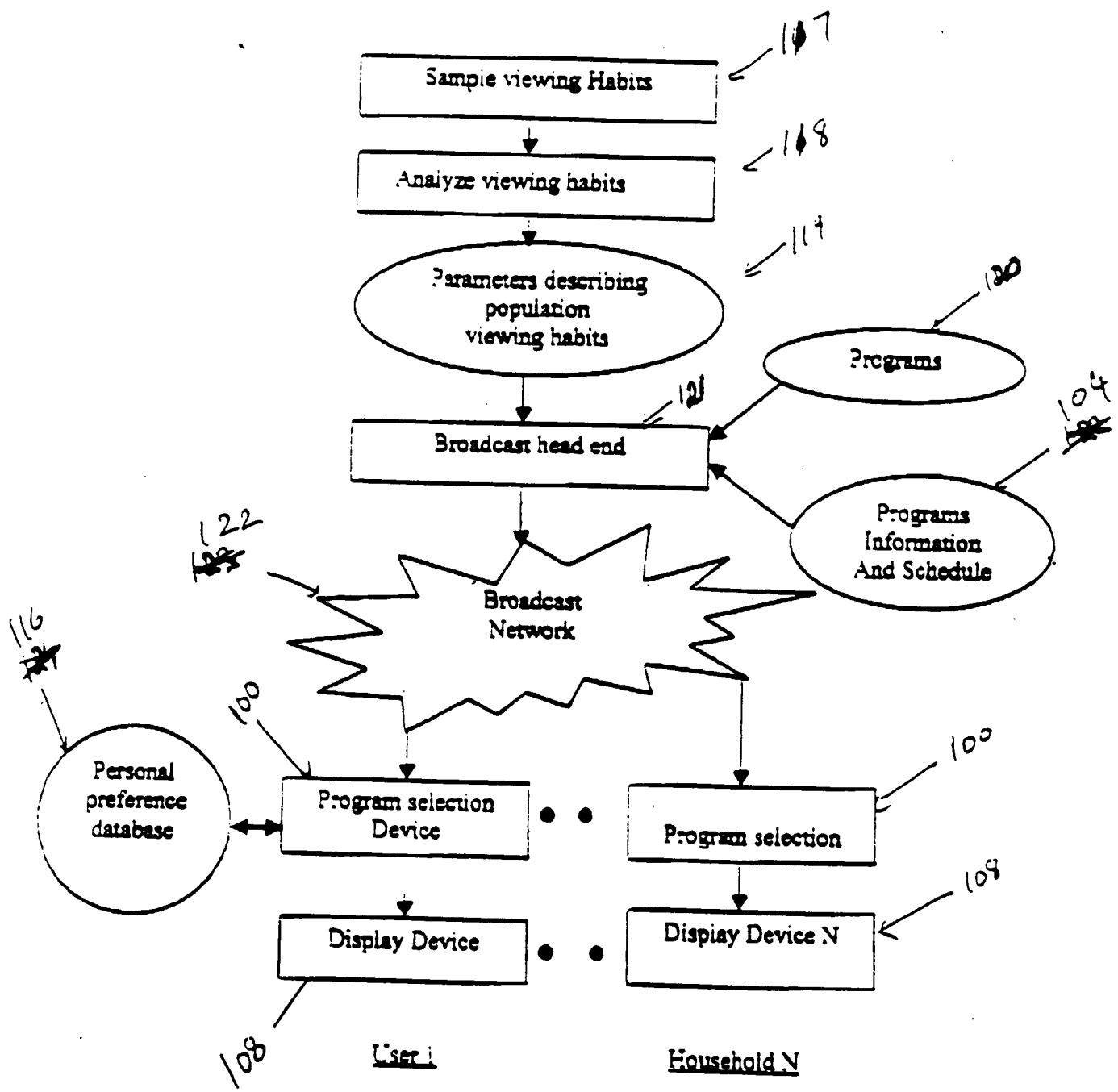


Figure 2

Examples of Program Information

Title = Seinfeld
Program Type = Sitcom
Category = Comedy
Actors = (Actor1 , Actor2)

Title = US Debt Report
Program Type = News article
Category = US Govt. Financial
People Mentioned = (Bill Clinton,
Alan Greenspan)

Example 1

124

Example 2

125

Figure 3

Examples for mains

Movie
Adventure
Sports
Mad About You
dynamic trait 1
Dynamic trait 2
NBC NEWS
FRIDAY Movie
Premier Mad About You

126

Examples for Liking for viewer N

Movie = 14
Adventure = 7
Sports = 0.3
Mad About You = 5
dynamic trait 1 = 3
Dynamic trait 2 = 5
NBC NEWS = 13
FRIDAY Movie = 18
Premier Mad About You = 15

127

Figure 4

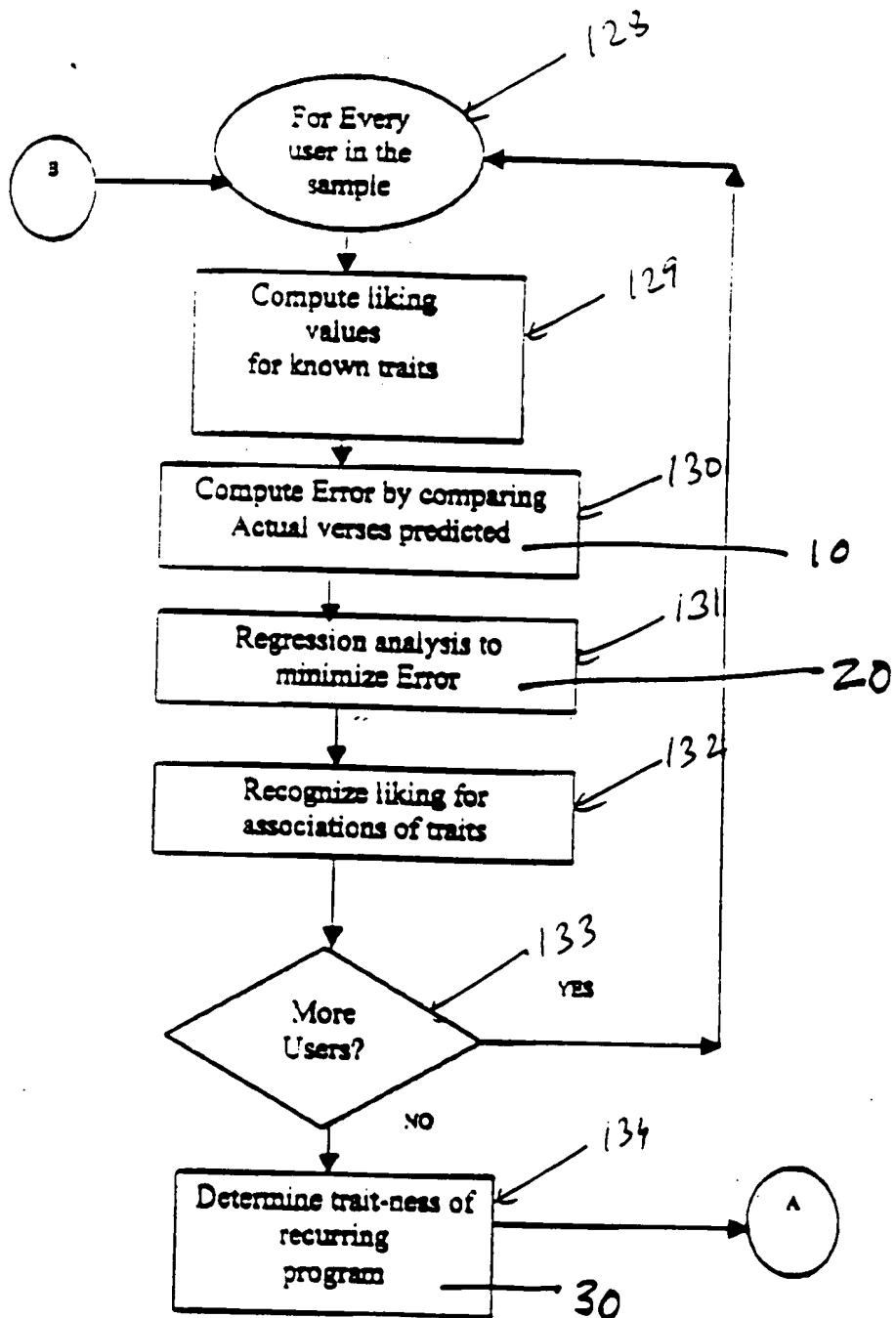


Figure 5(a)

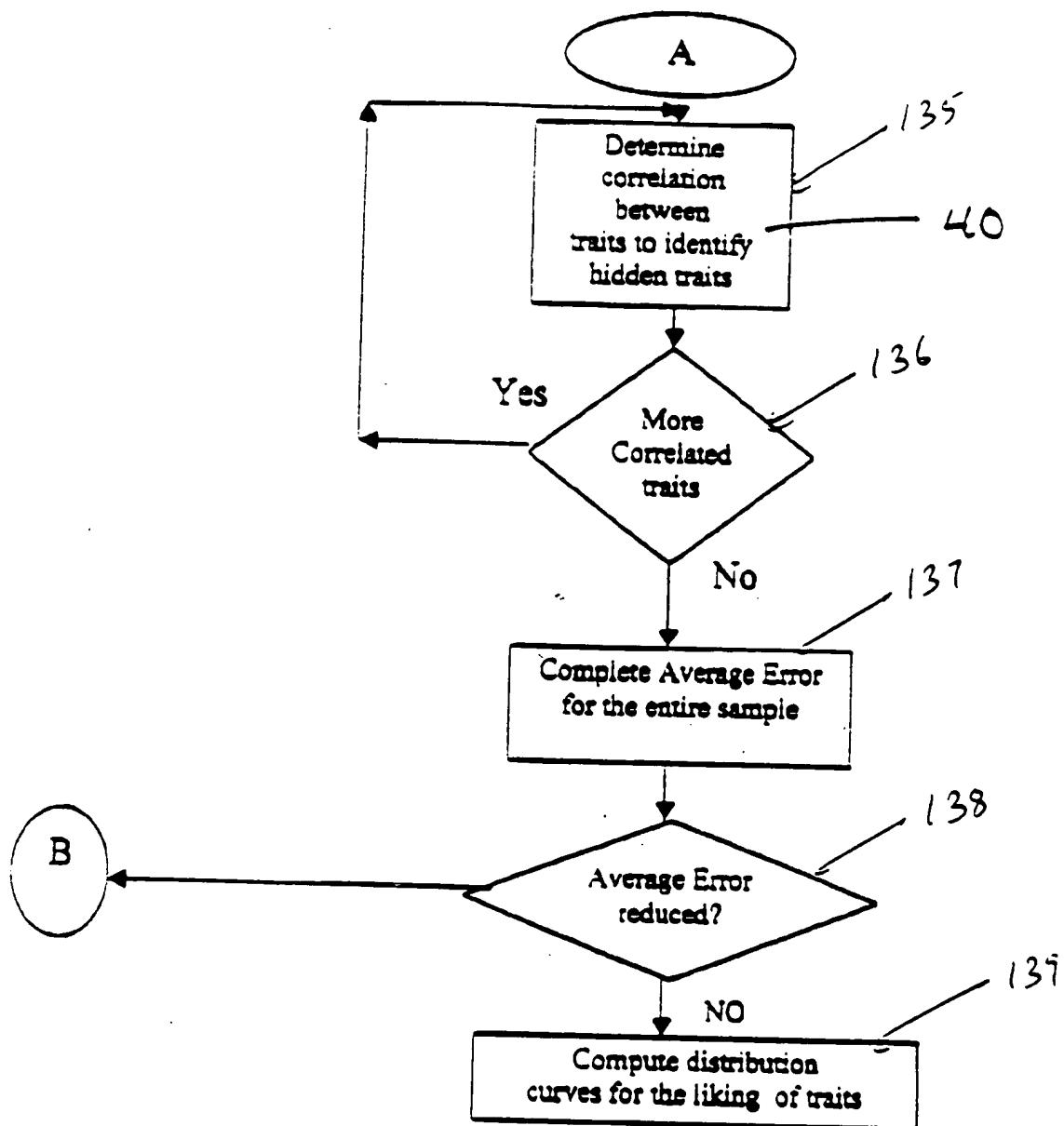


Figure 5 (b)

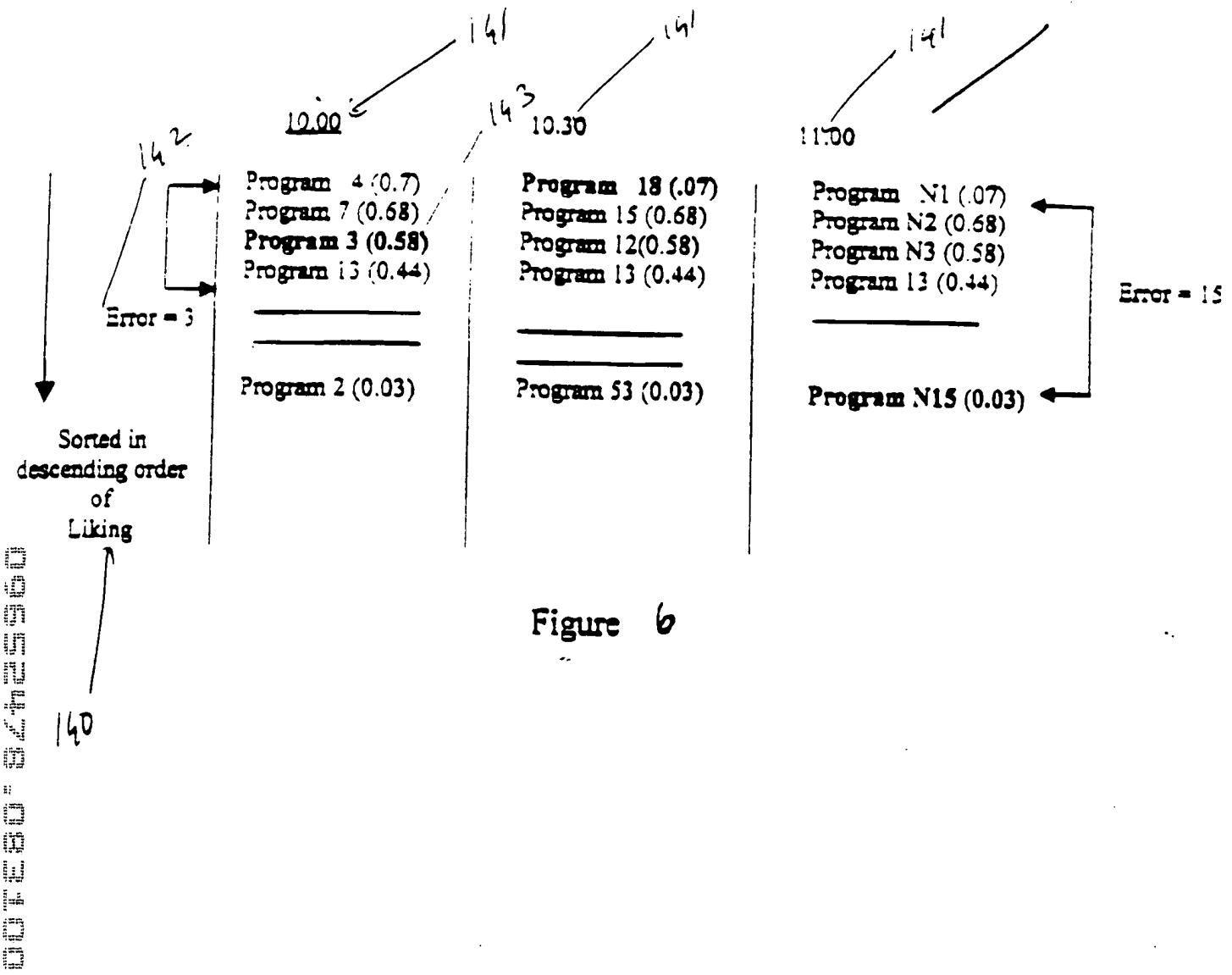


Figure 6

CURRENT LIKING VALUE

$$\lambda_{a1} = 2 \rightarrow 144$$

$$\lambda_{b1} = 5 \rightarrow 145$$

$$\lambda_{c1} = -3$$

$$\lambda_{d1} = 0$$

Average 4

t_N

20

$$\lambda_B \xrightarrow{\text{NEXT LIKING VALUE}} \lambda_{a2} = 1.5$$

$$\lambda_{a2} \rightarrow \lambda_{b1} = 5$$

$$\lambda_{c1} = -3$$

$$\lambda_{d1} = 0$$

$$145 \xrightarrow{\lambda_{a2}} 147 \xrightarrow{\lambda_{a1}} 146$$

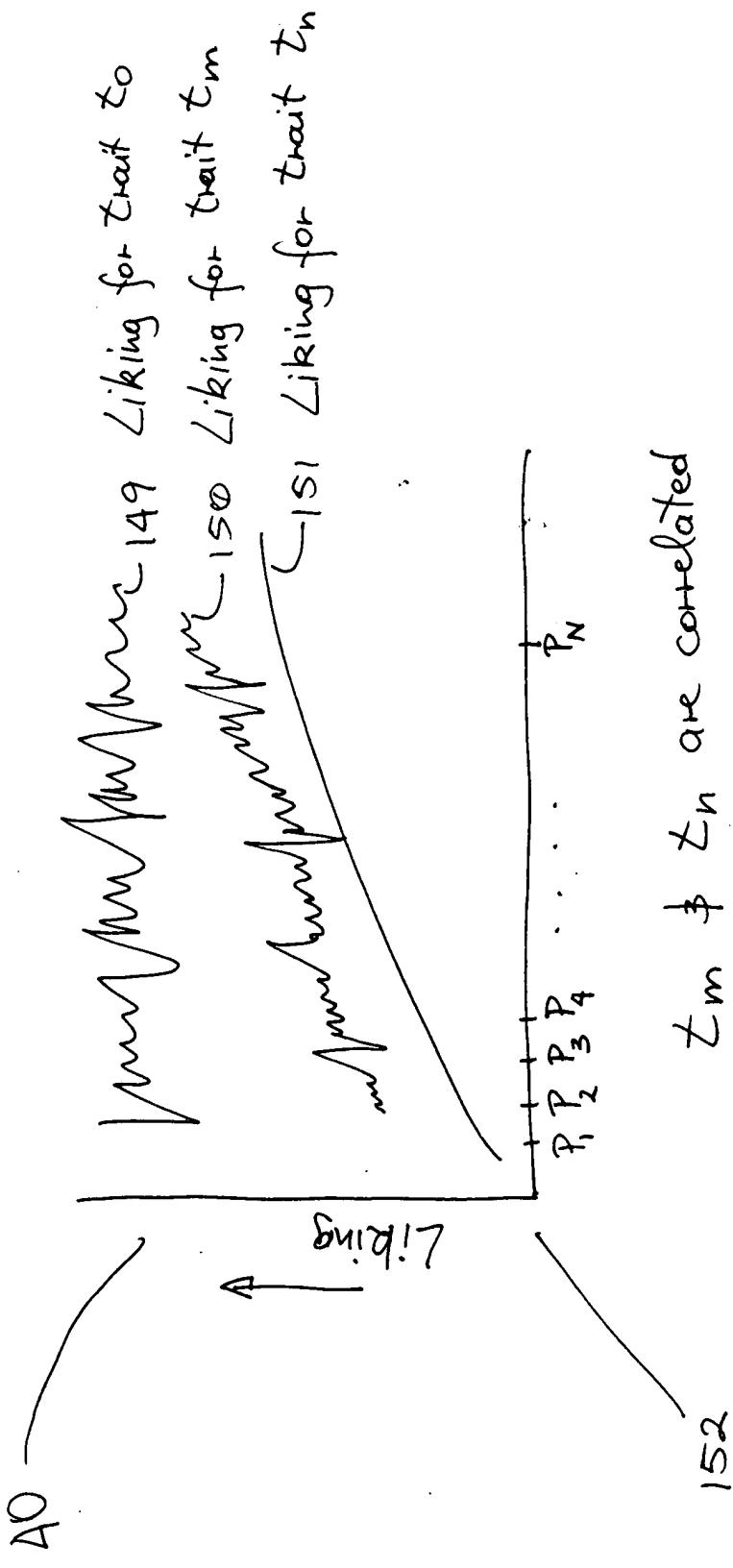
$$\lambda_a$$

$$(\lambda_b = \lambda_{b1}$$

$$\lambda_c = \lambda_{c1}$$

FIGURE 7.

RECOGNIZING HIDDEN TRAITS IN PROGRAMS



$t_m \nparallel t_n$ are correlated

$\Rightarrow t_m$ can be expressed as $t_m = t_x + t_{m'}$
 t_n can be expressed as $t_n = Ct_x + t_n'$

FIGURE 8

Computing Traitness of a trait is a program

30

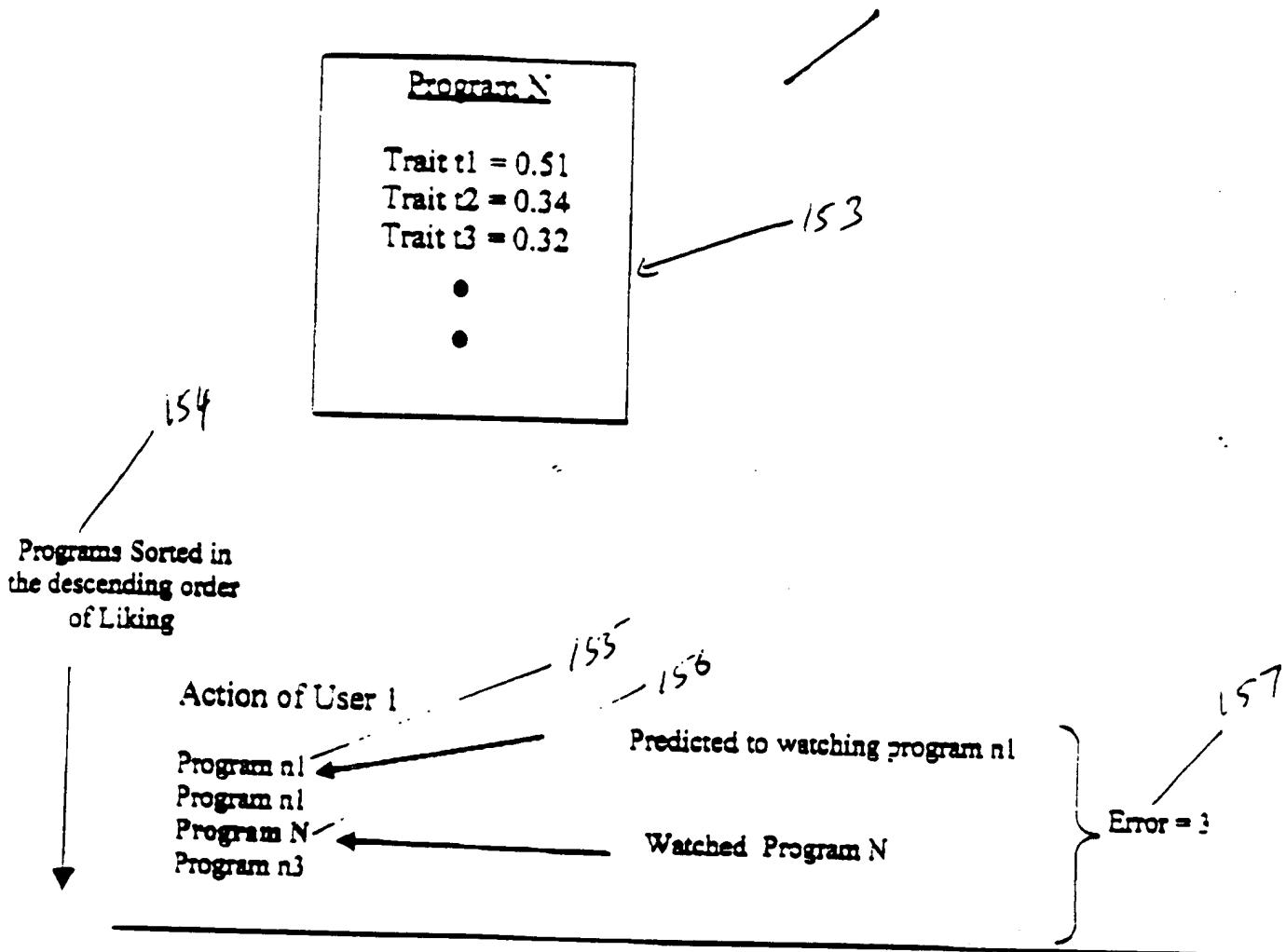
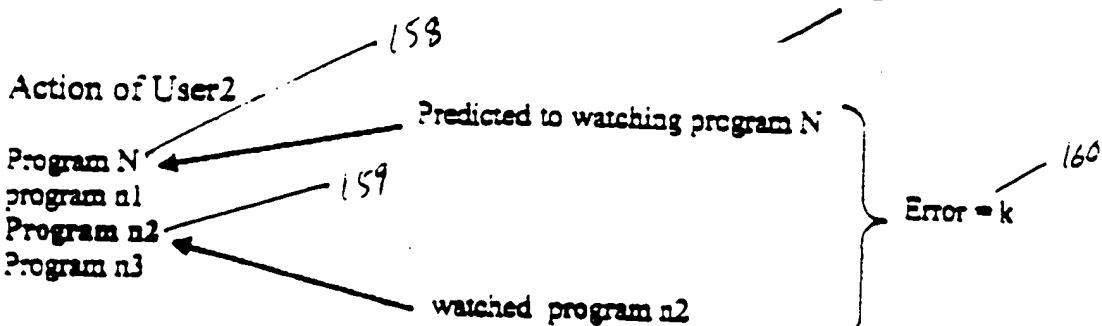


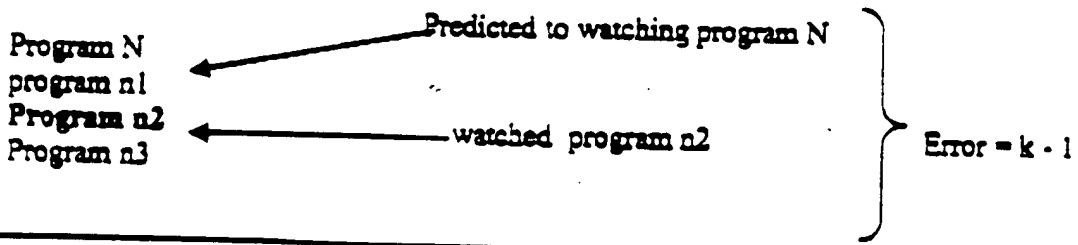
Figure 9(a)

Computing Traitness of a trait a program

30



Action of User3



Action of User4

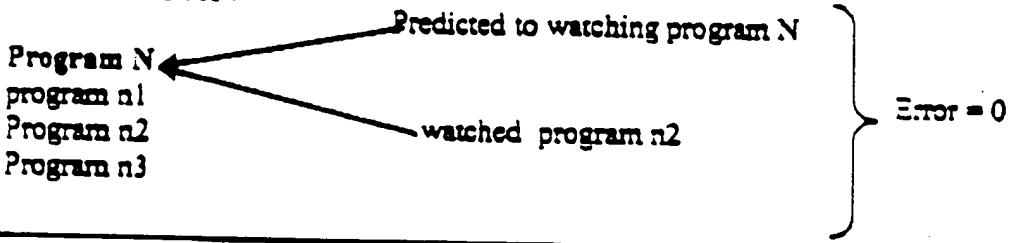
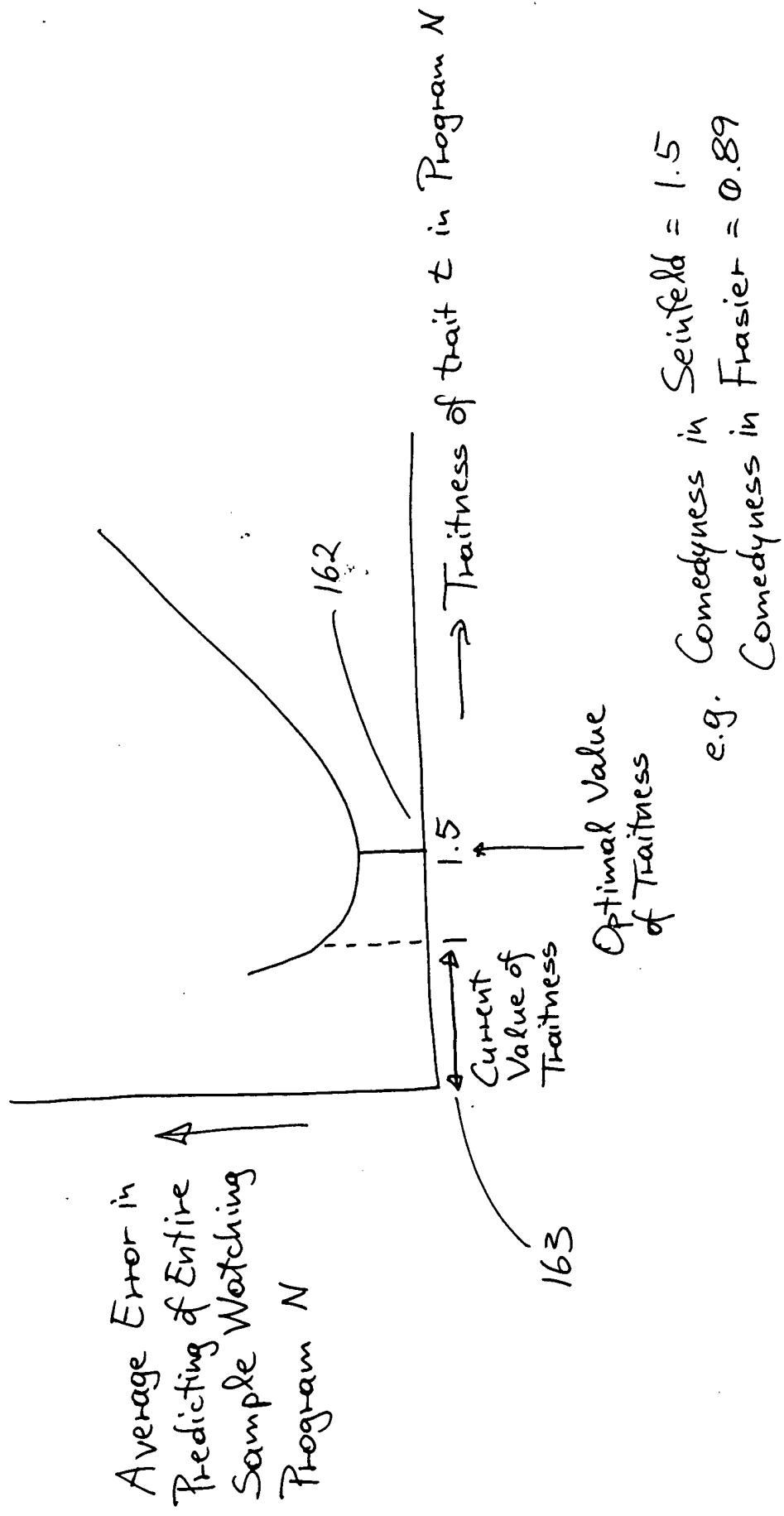


Figure 9(b)

COMPLEXITY TRAITS IN A PROGRAM



e.g. Comedyness in Seinfeld = 1.5
Comedyness in Frasier = 0.89

Figure 9(c).

Example for Liking Distribution Record format

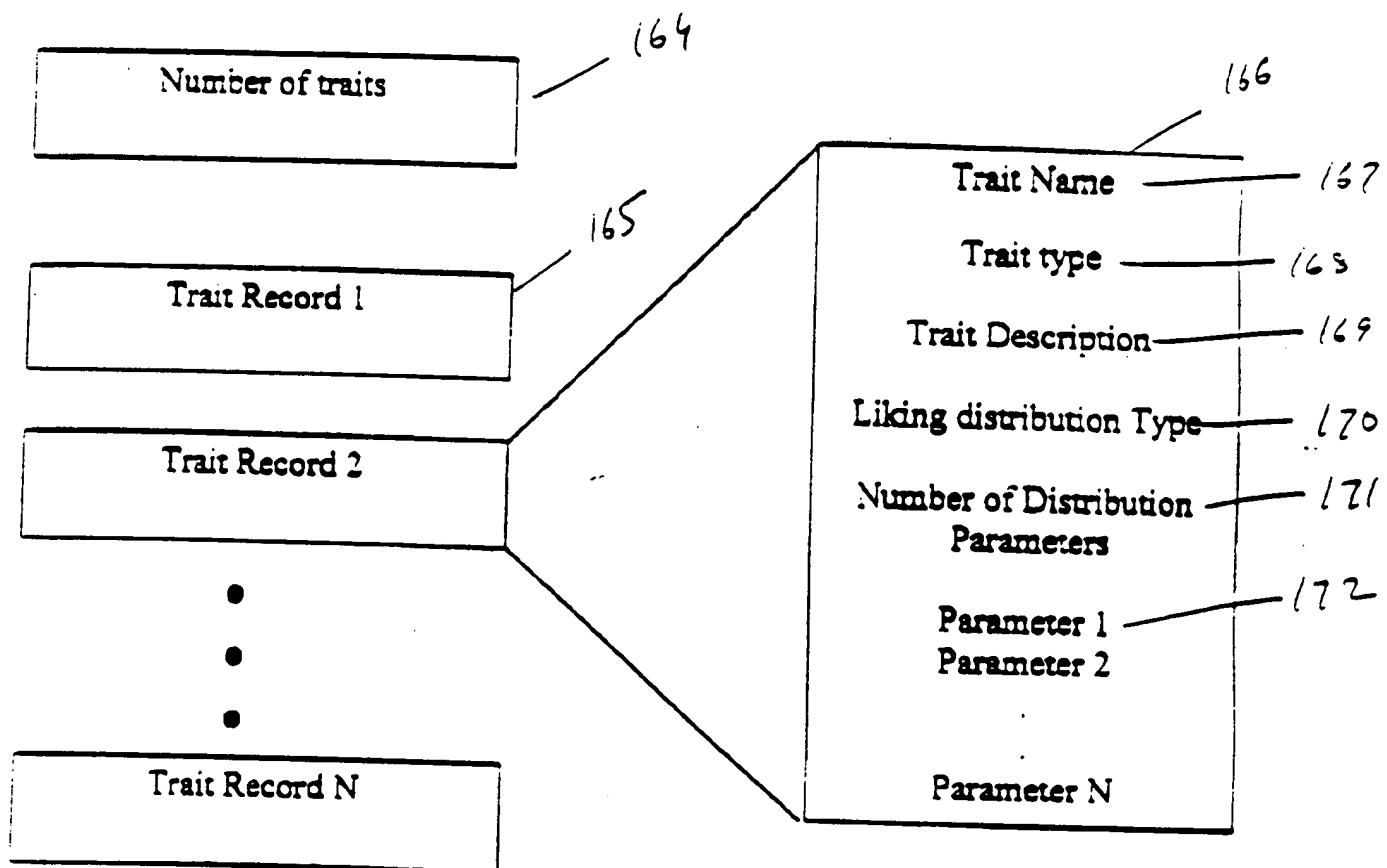


Figure 10

Some Sample Values For Fields in trait Record

Trait type

Static,
dynamic
Association
Generated

Trait Description

(NBC, "NEWS"),
SUBSTRING("CIA") IN DESC,
TITLE

Distribution

Normal
Exponential
Defined type 1
Defined type 2

Distribution Parameters

Mean = 13, Deviation = 2

Figure 11

Example for Traitness of recurring Programs

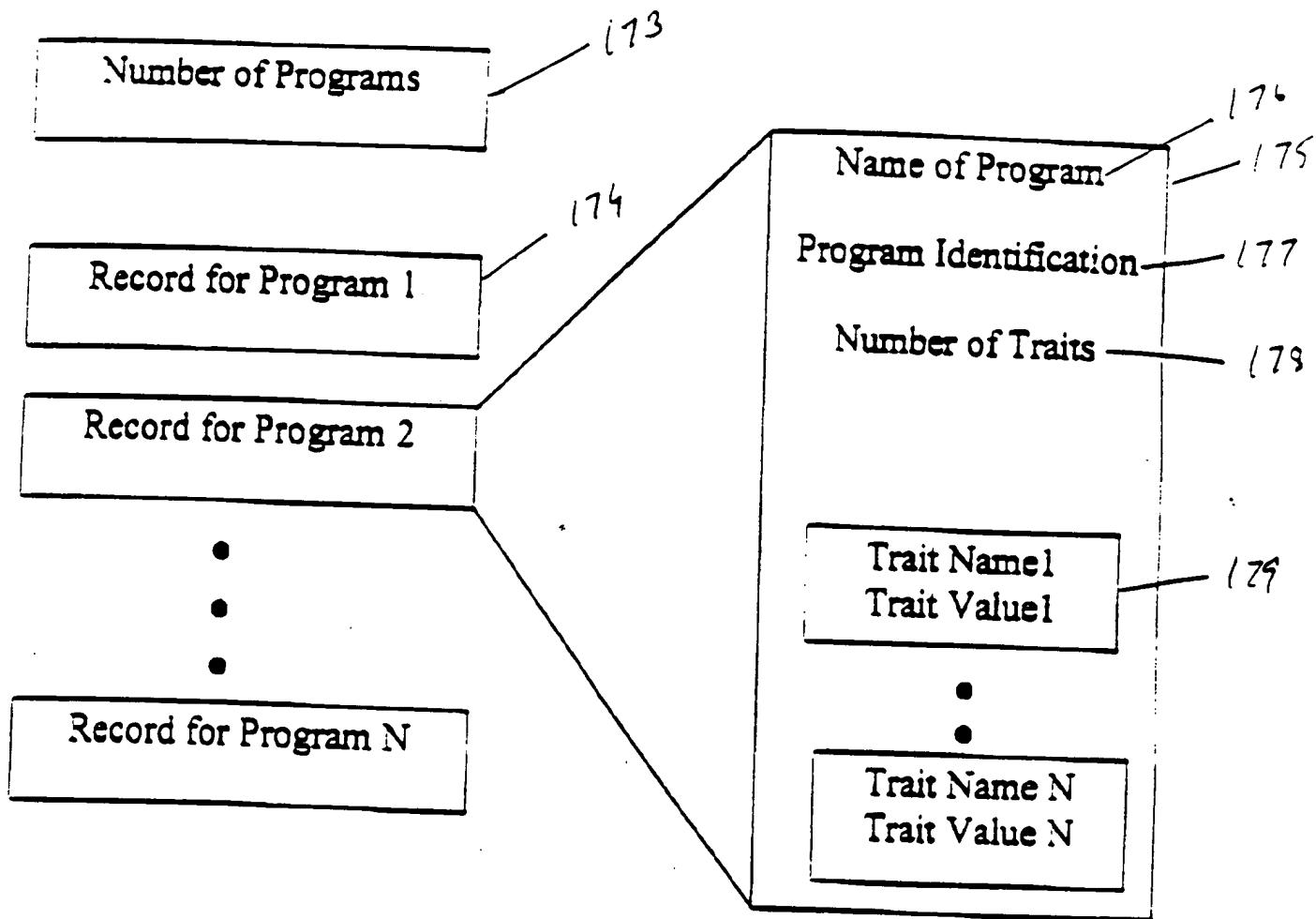


Figure 12

Example For Broadcasting traitness as a part of EPG Data

Program Info

Seinfeld,

NBC ,

Comedy = 0.07

sitcom ,

Dynamic trait 1 = 0.1

•

•

Actor = Seinfeld

Figure 13

Example for Selection Record

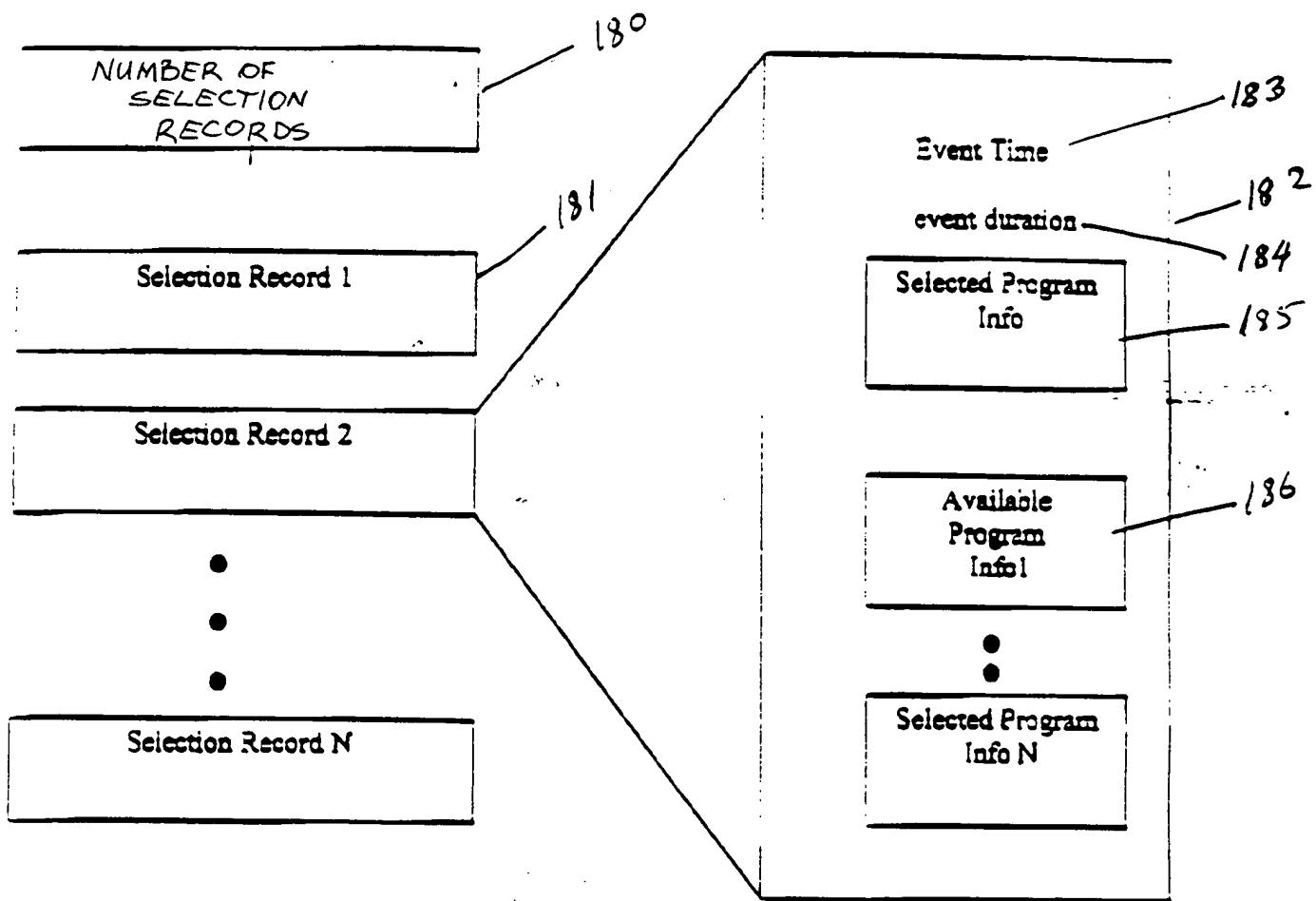


Figure 14

Generation of User Selection History

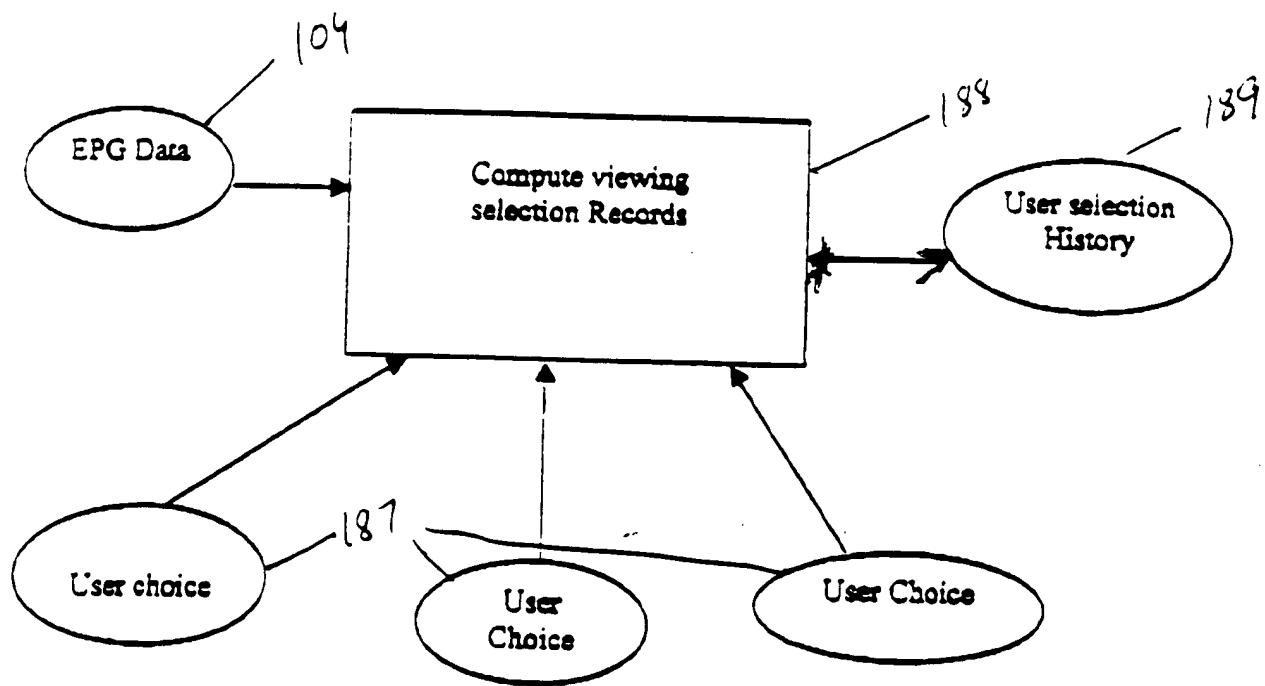


Figure 15

Learning Liking for traits for a given user

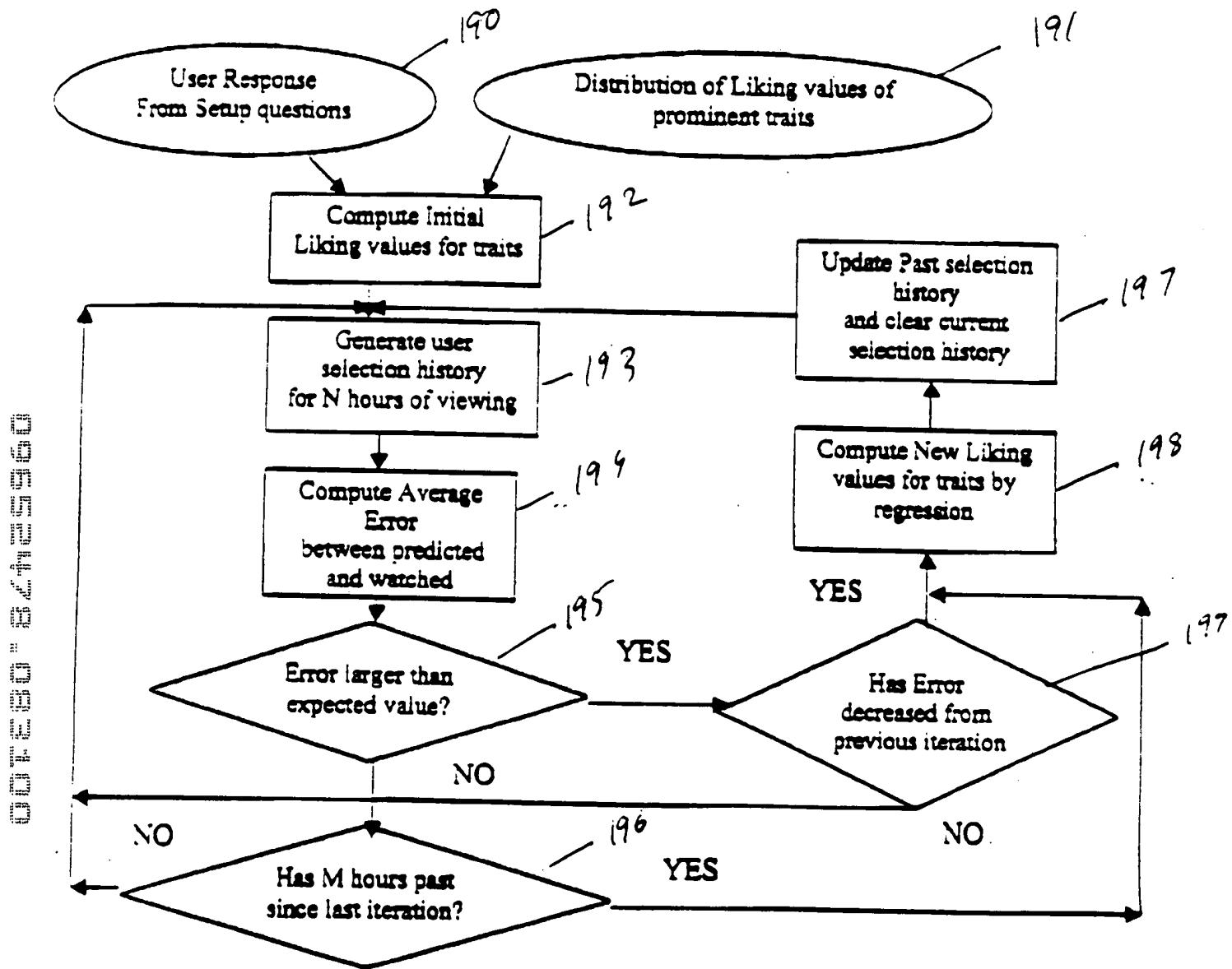


Figure 16

Computing Relevance

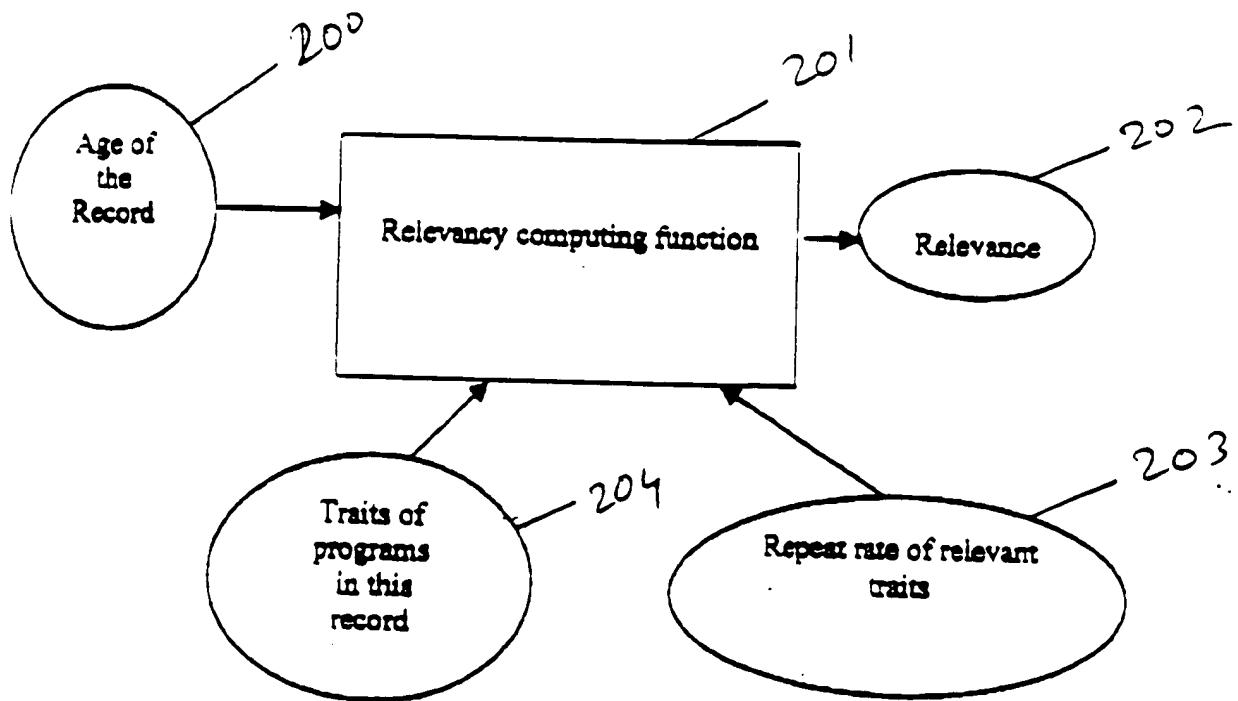


Figure 17 (a)

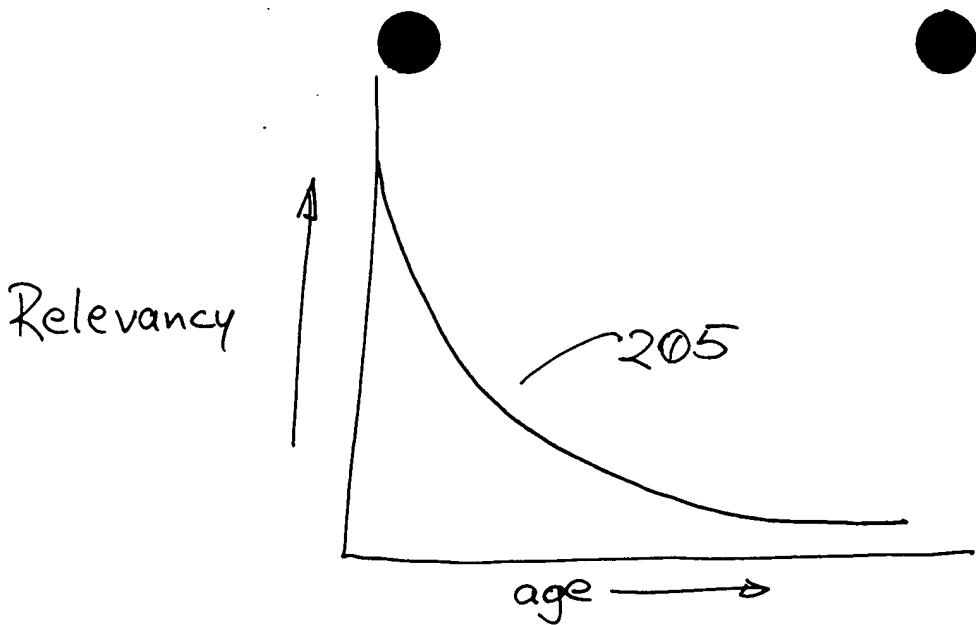


FIGURE 17(b)

Digitized by siddhant9600

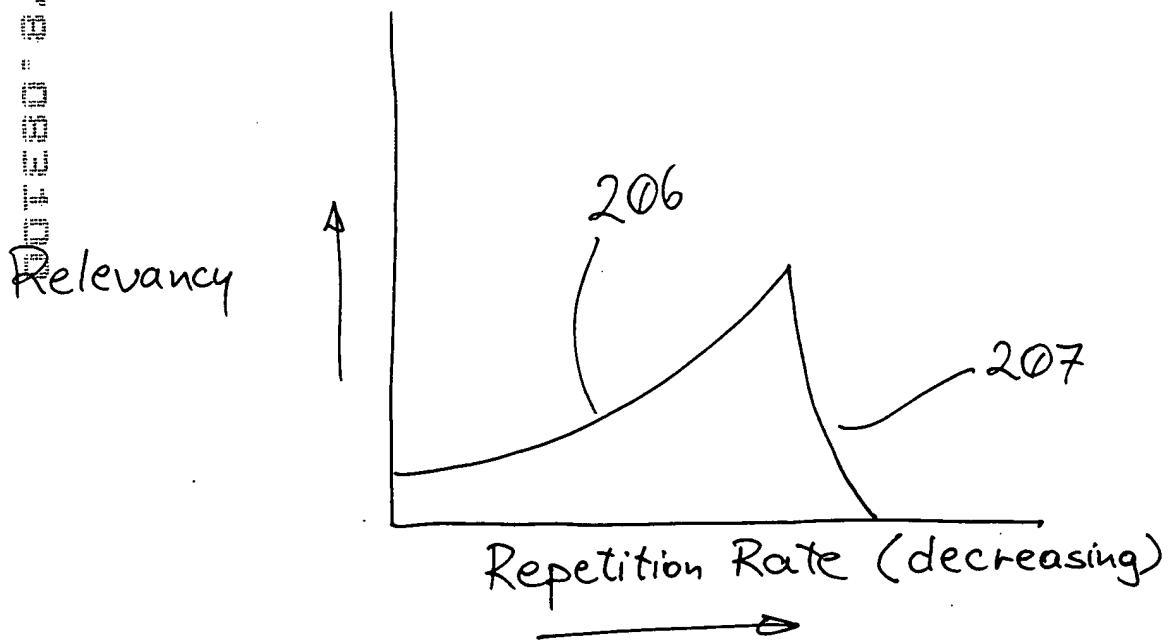


FIGURE 17(c)

Updation of past History

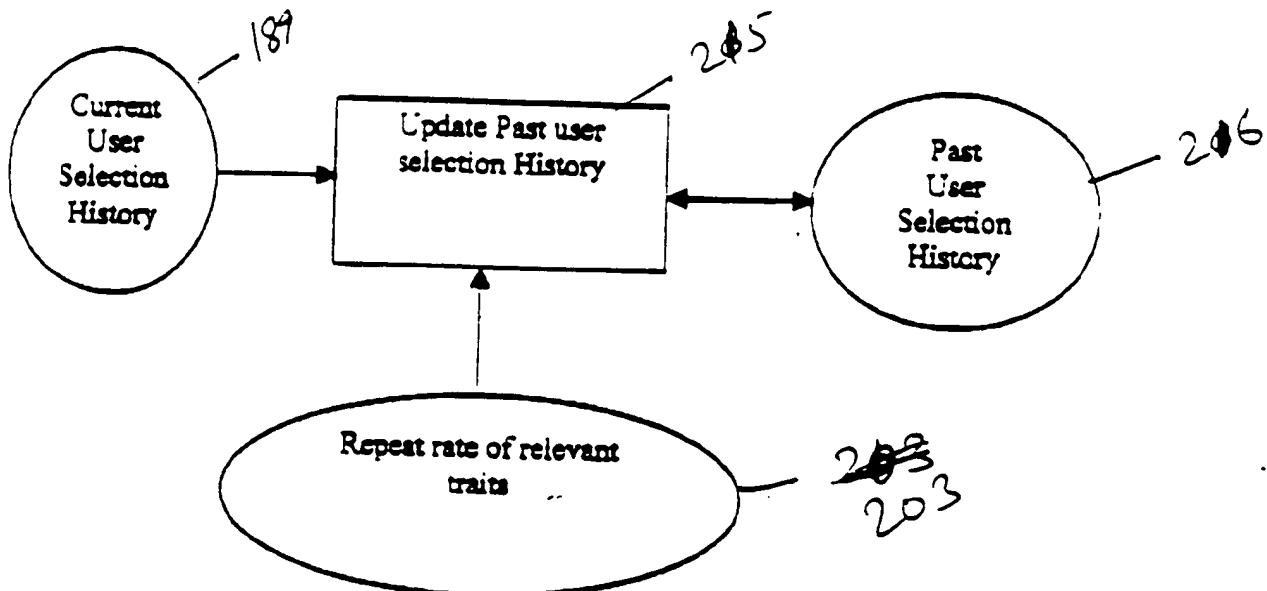


Figure 18(a)

Updation of Past Selection History

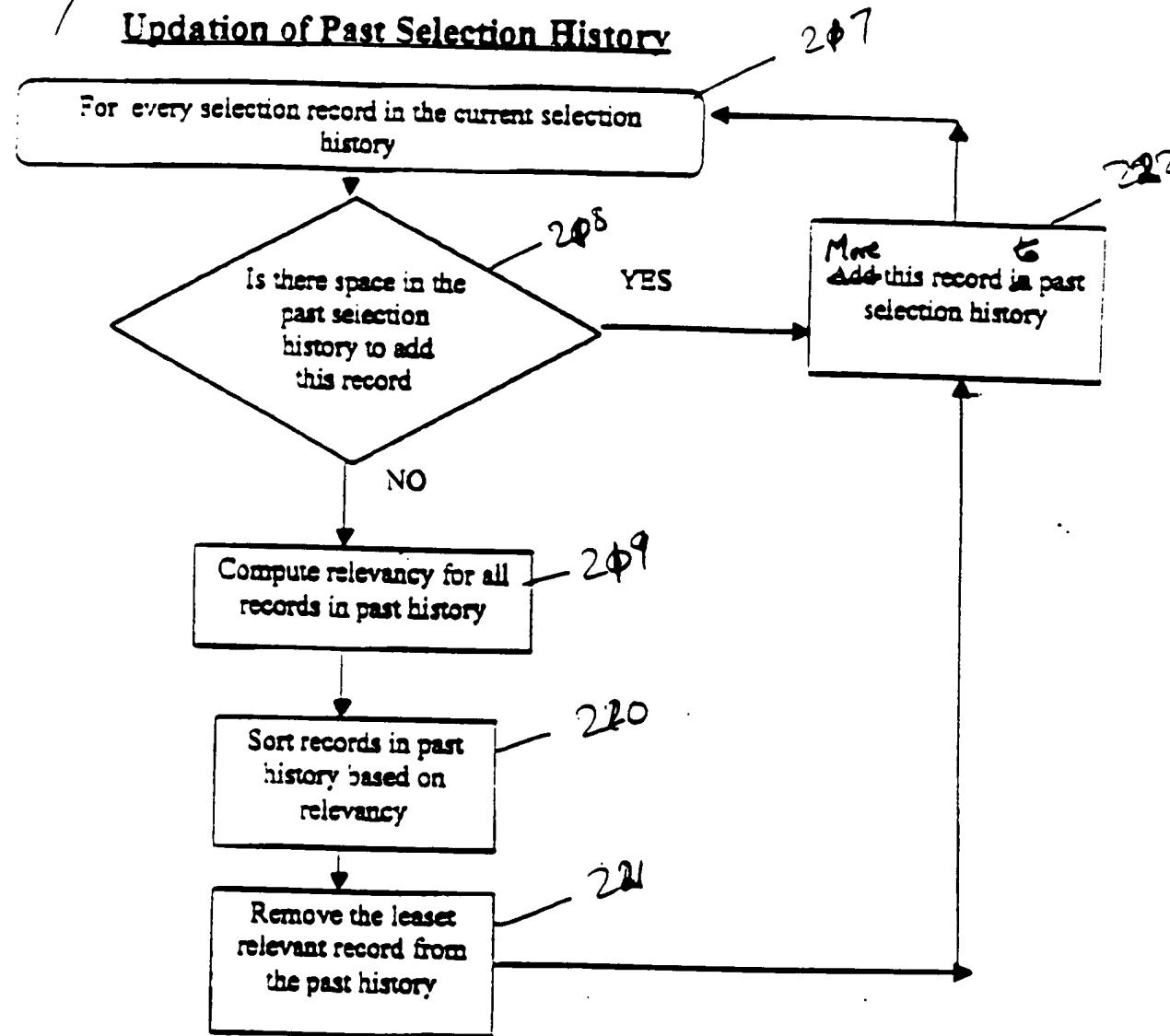


Figure 18(b)

Computing liking on clientside

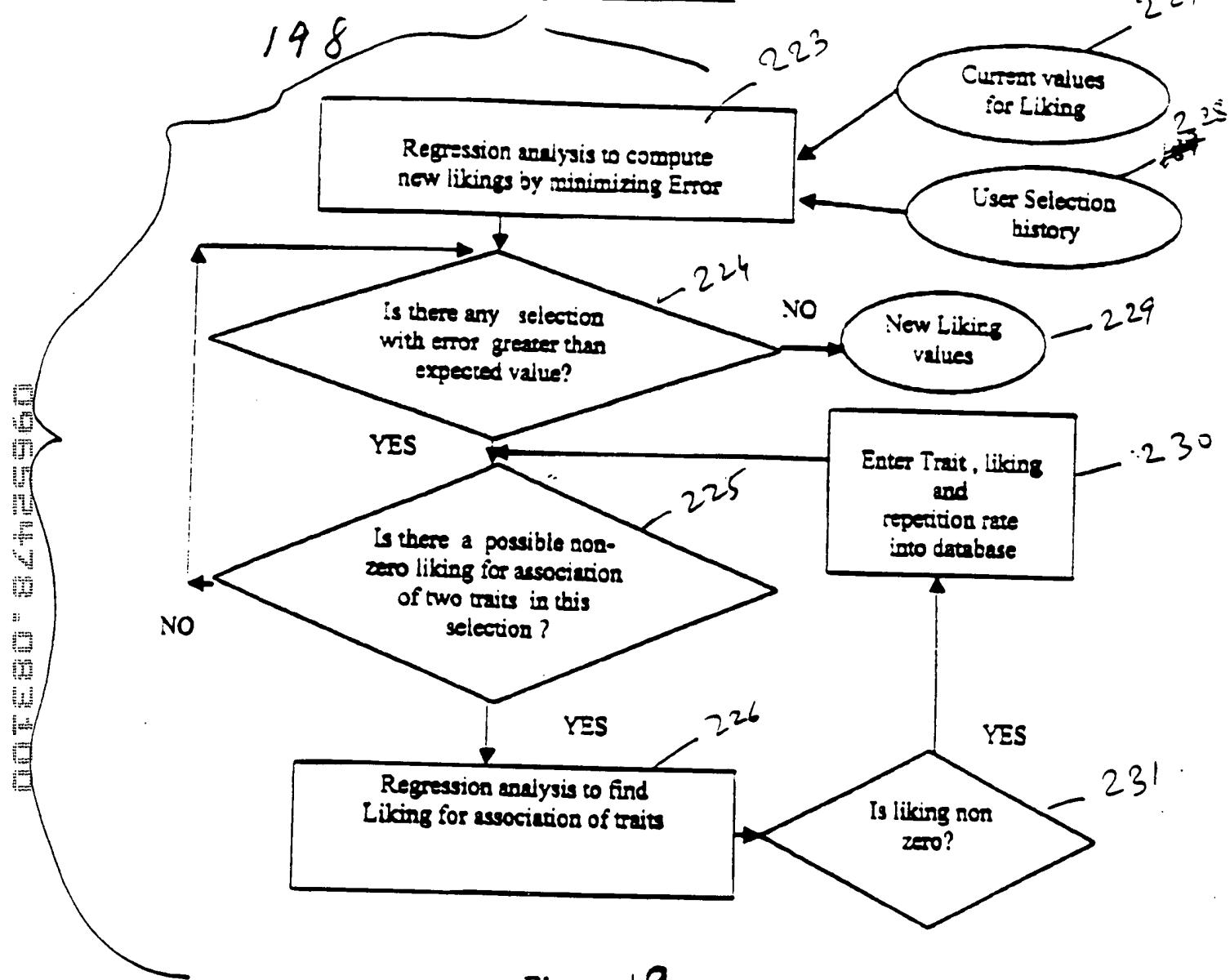


Figure 19

Computing scores for programs for future prediction

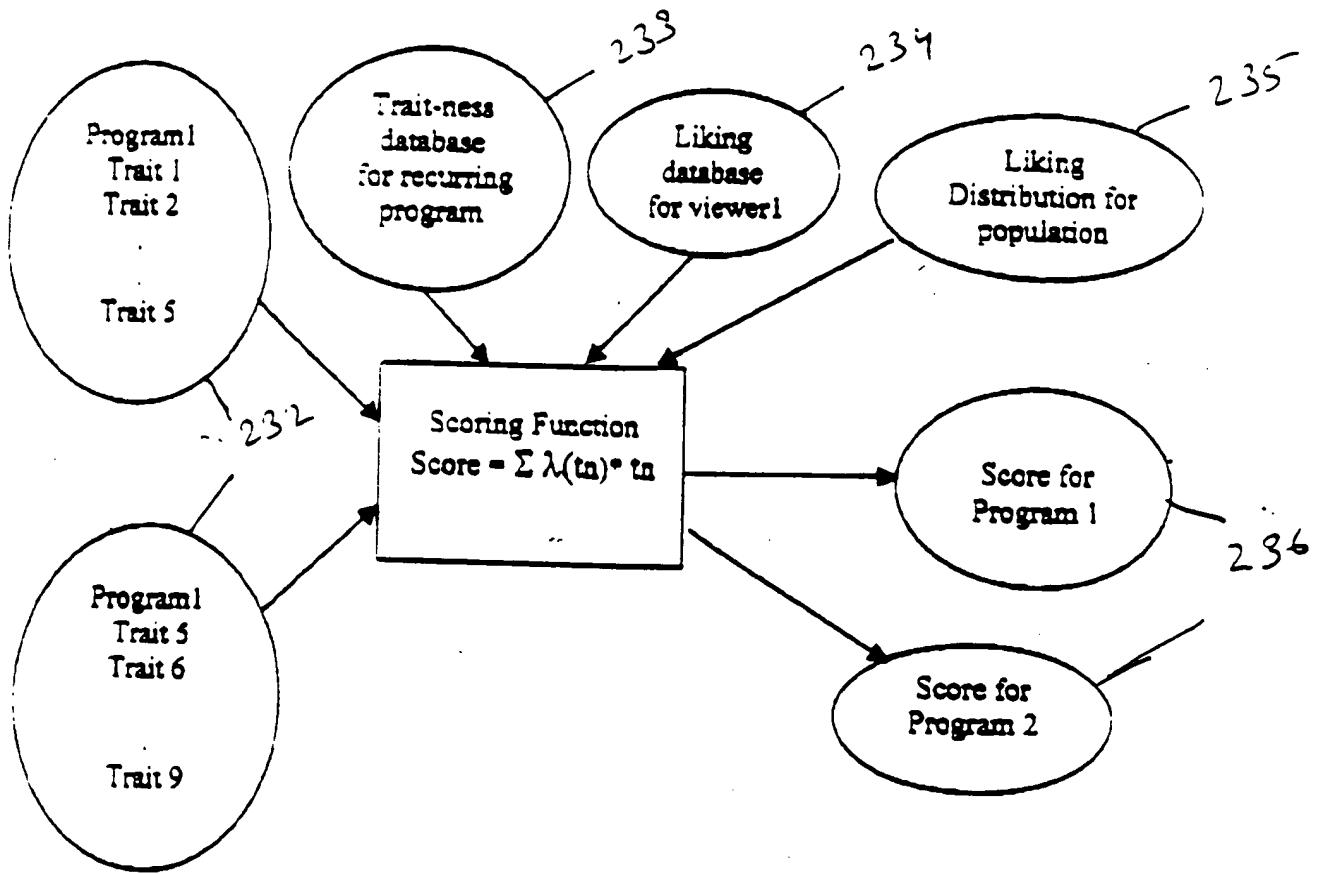


Figure 20

Distribution of Income in Sample

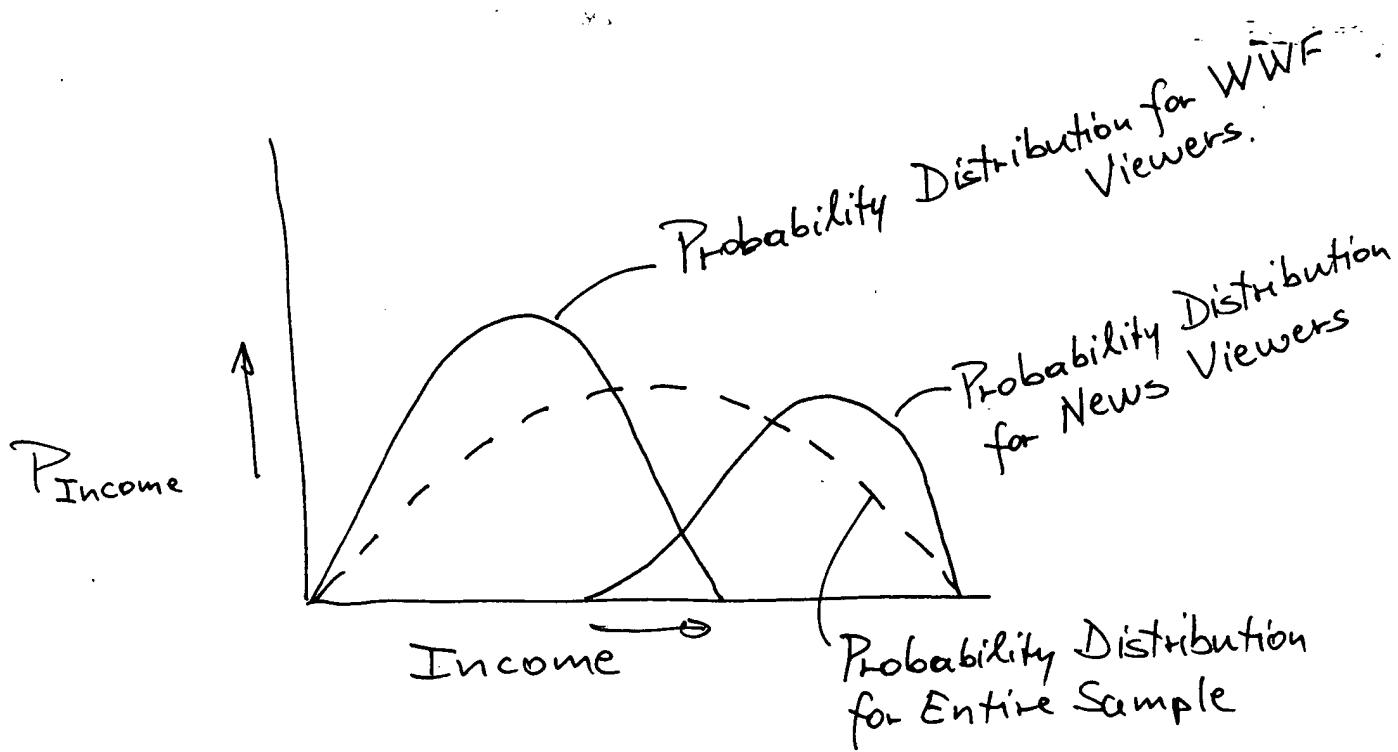
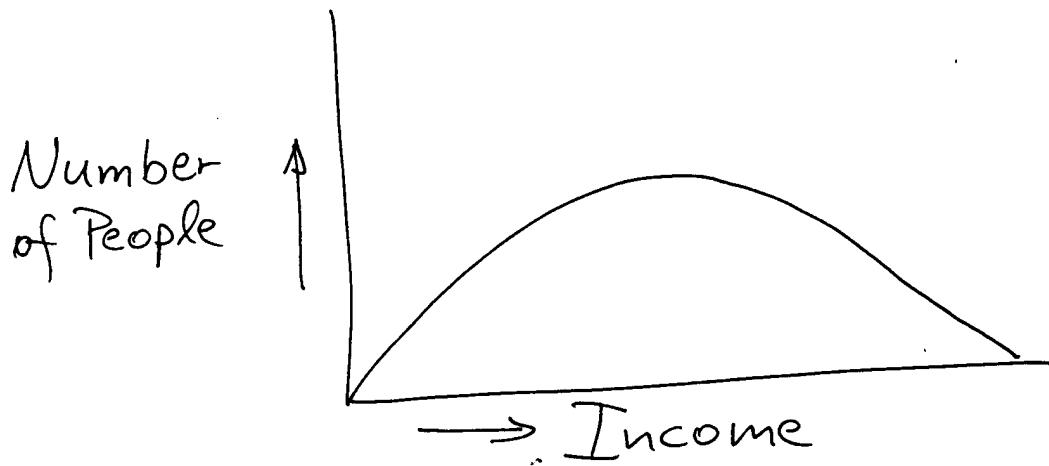
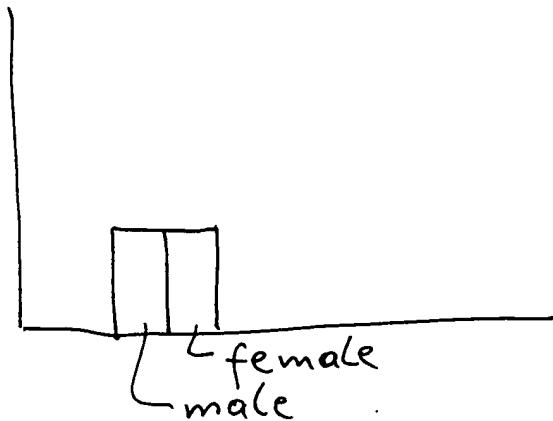
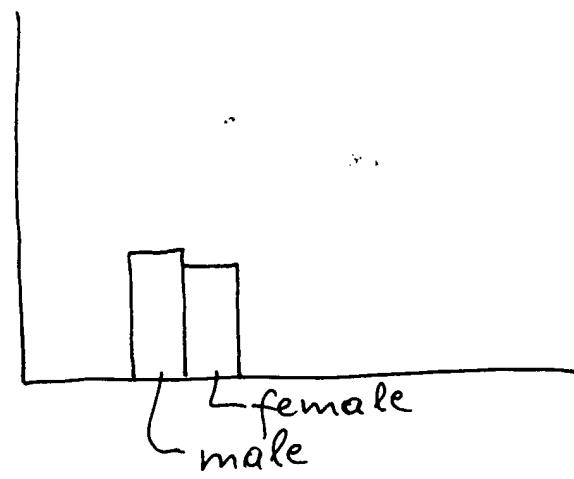


FIGURE 21 (a)

P
Entire
Sample



P
Viewers of
'Seinfeld'



P
Viewers of
'Days of Our Lives'

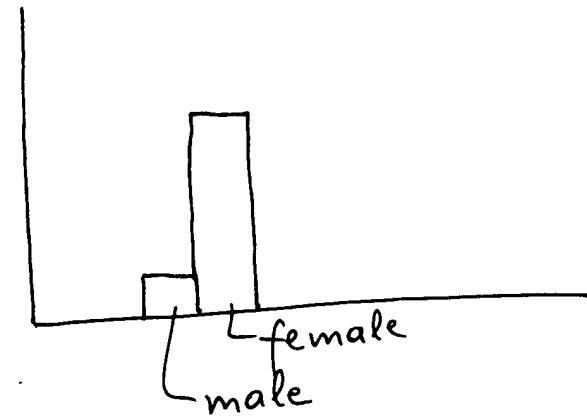


FIGURE 21 (b)

SYSTEM ARCHITECTURE

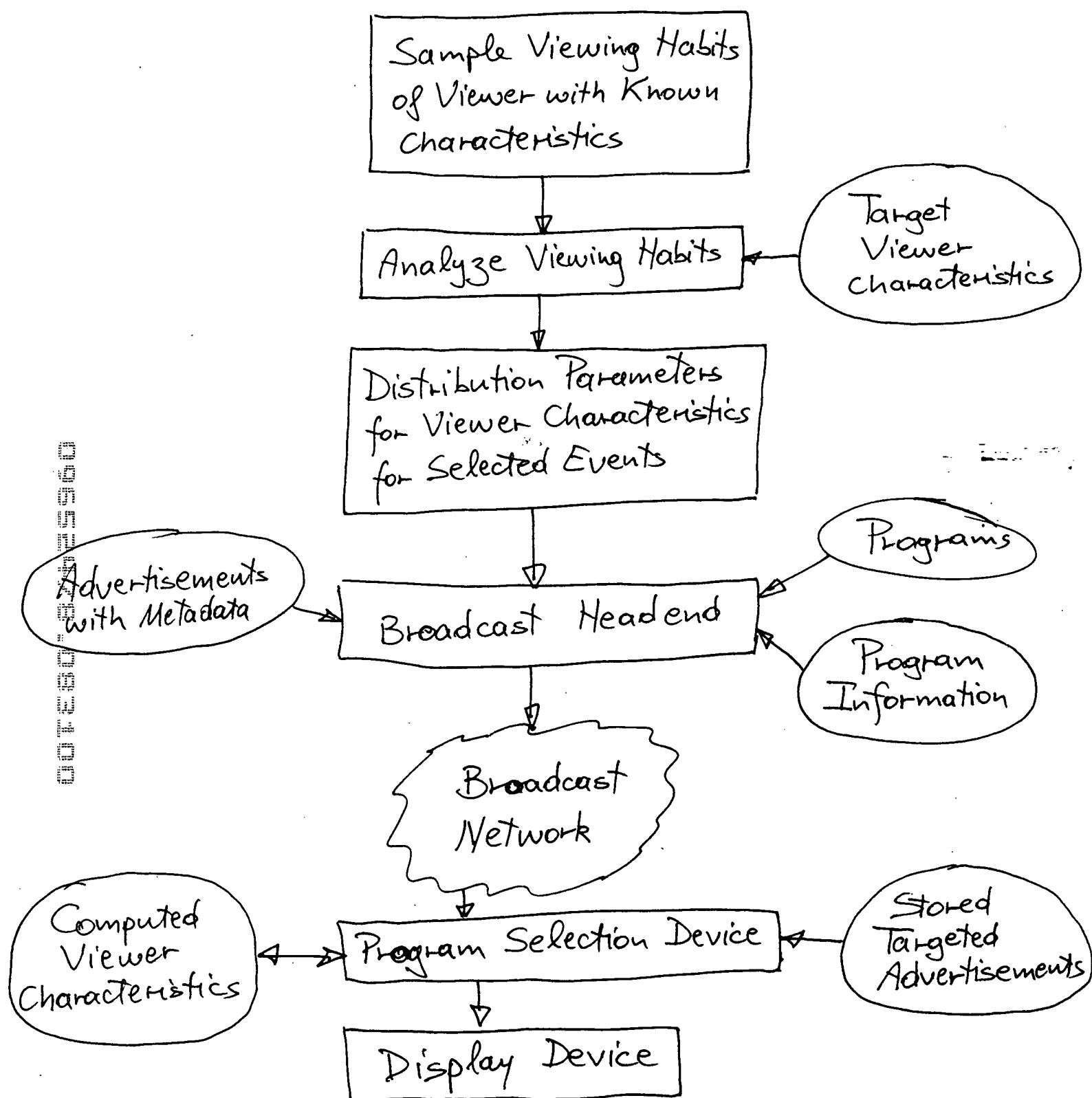


FIGURE 22

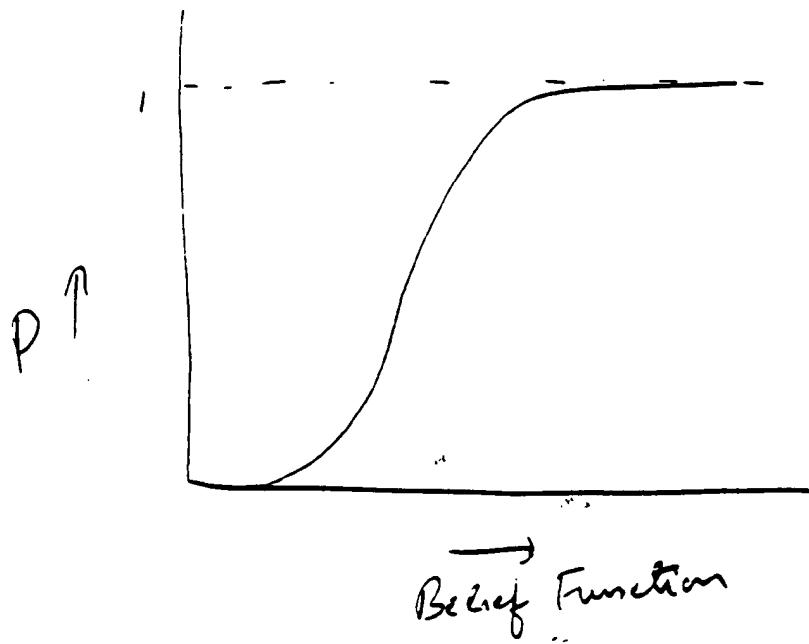


Figure 23 a

Demographic Trait Record format

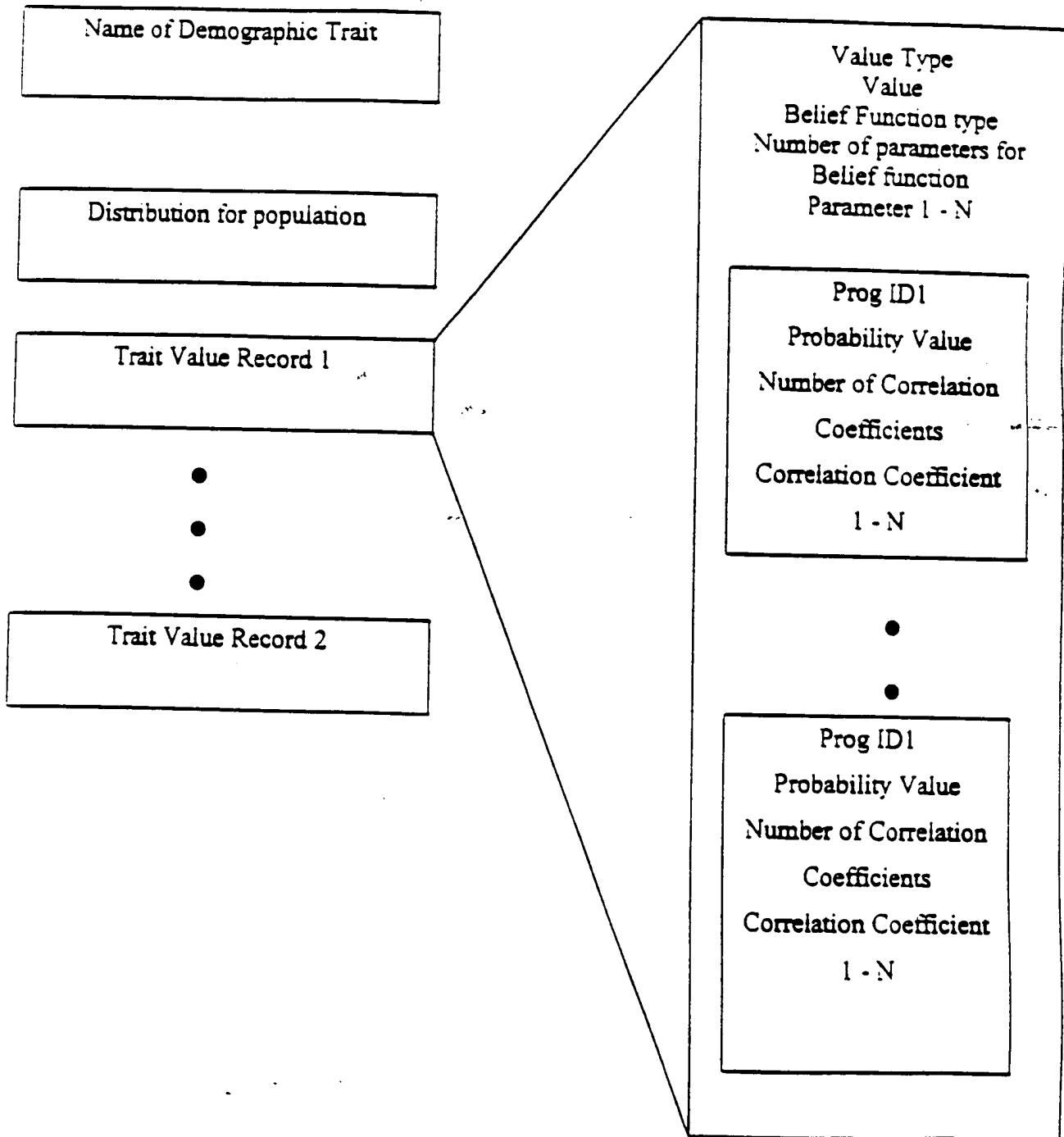


Figure 23b

Advertisement Targeting Record format

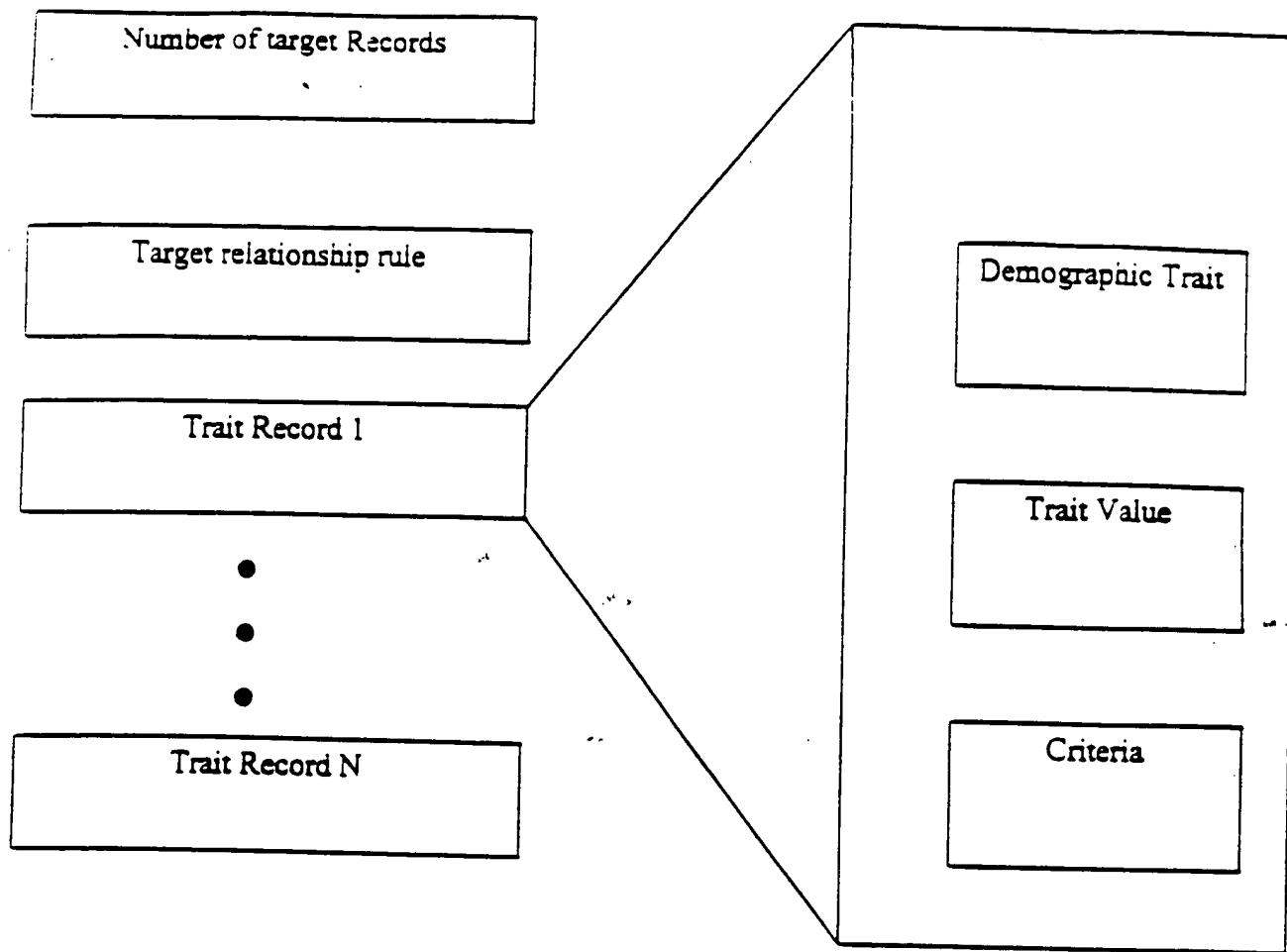


Figure 23C

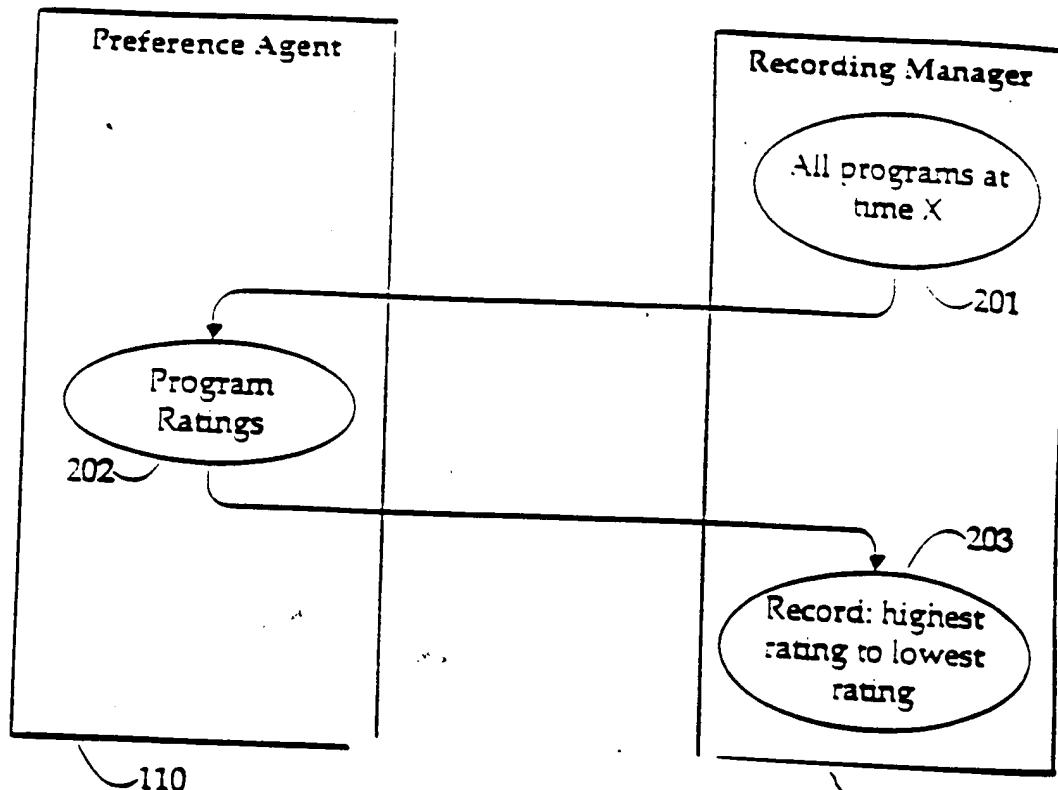


Figure 24

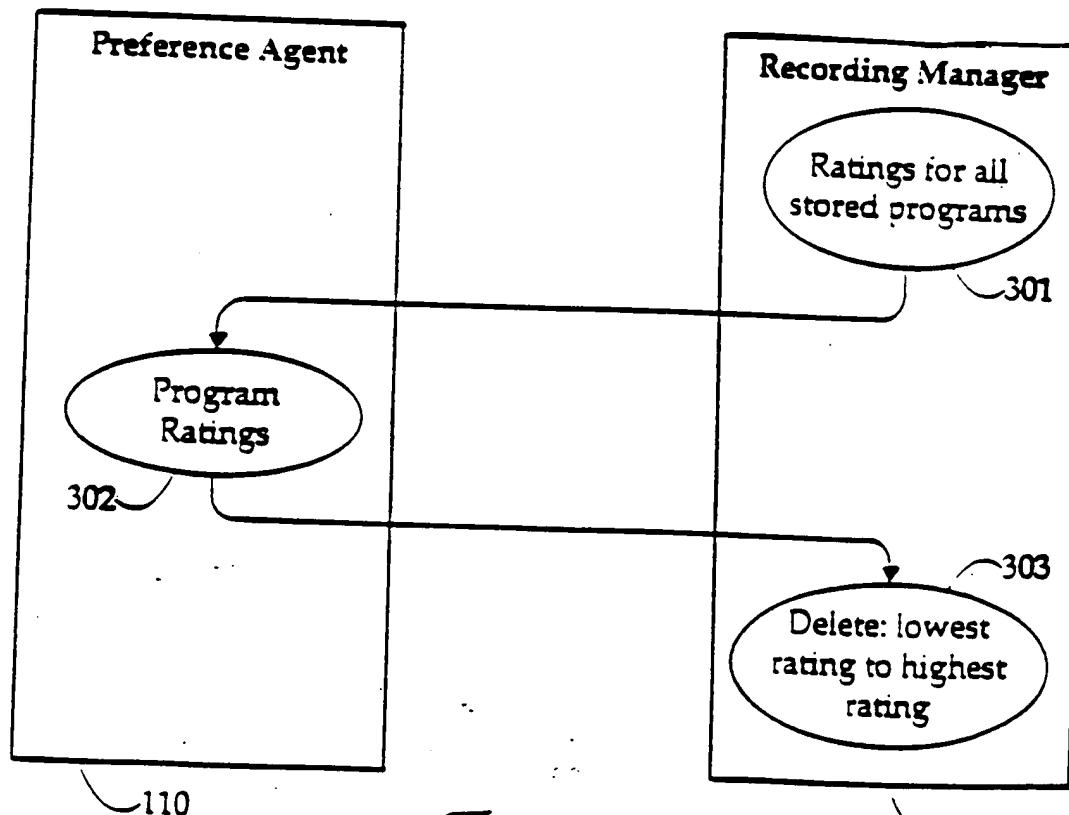


Figure 25

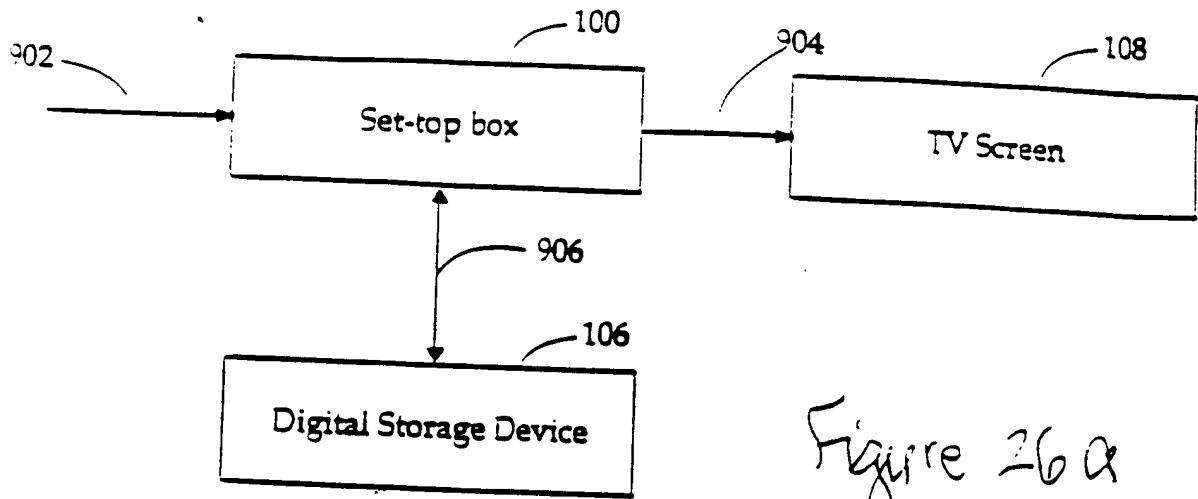


Figure 26a

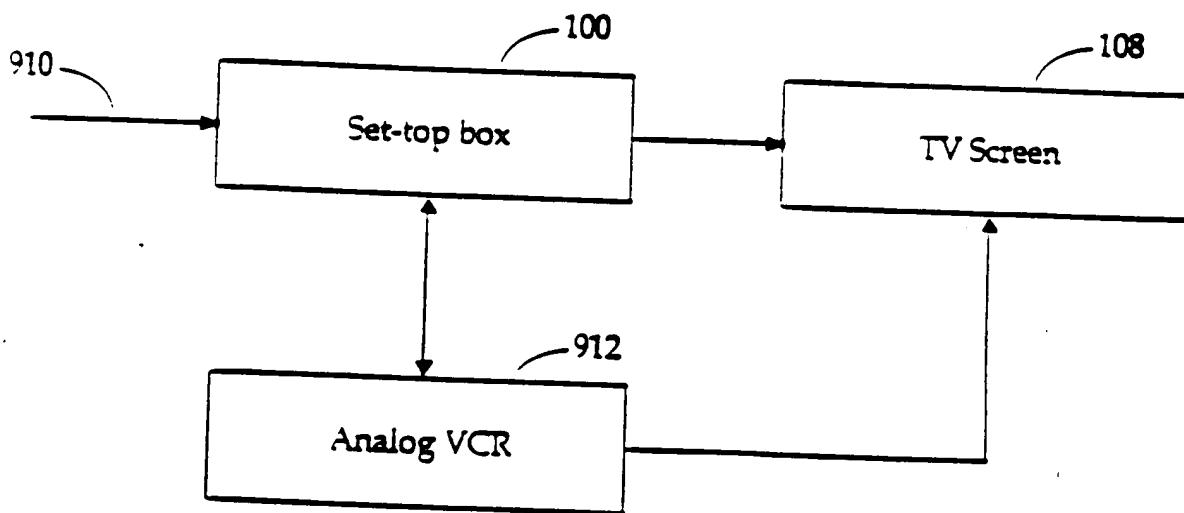


Figure 26b

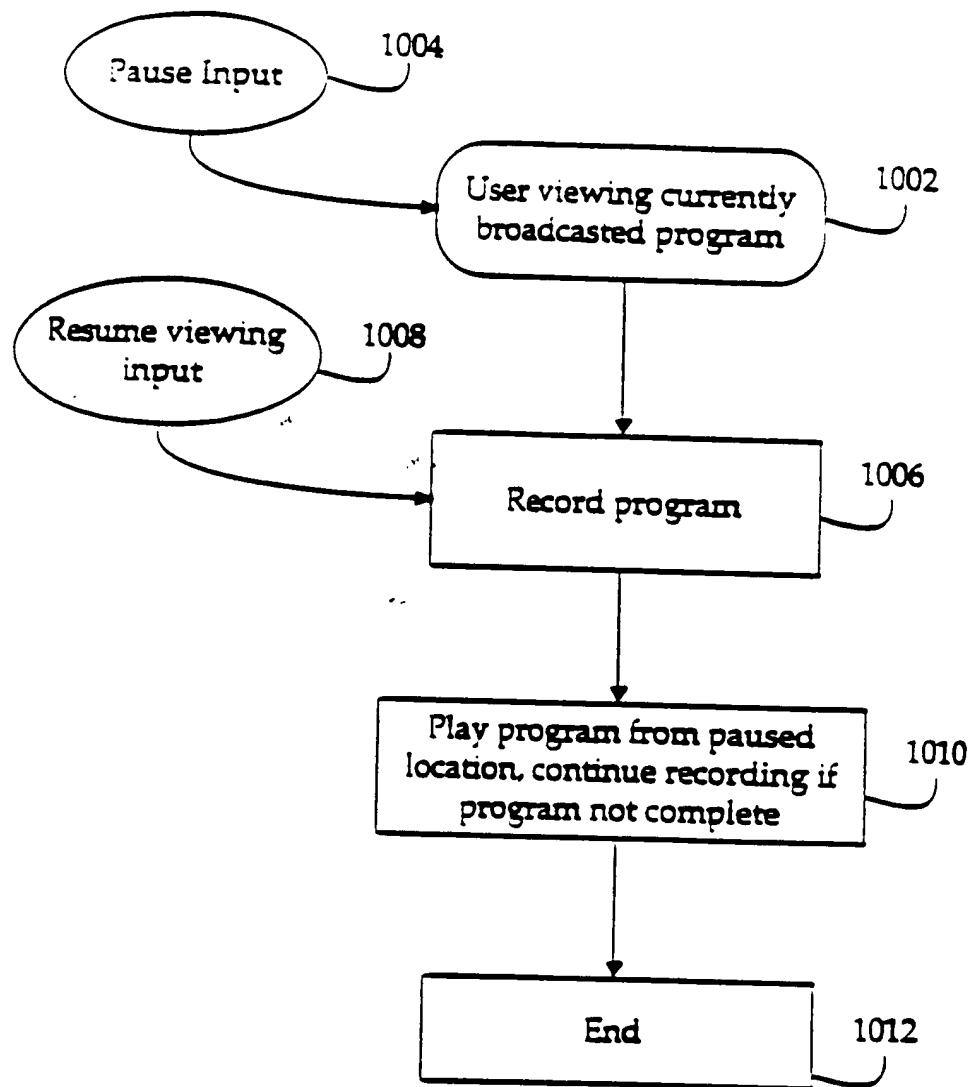


Figure 27

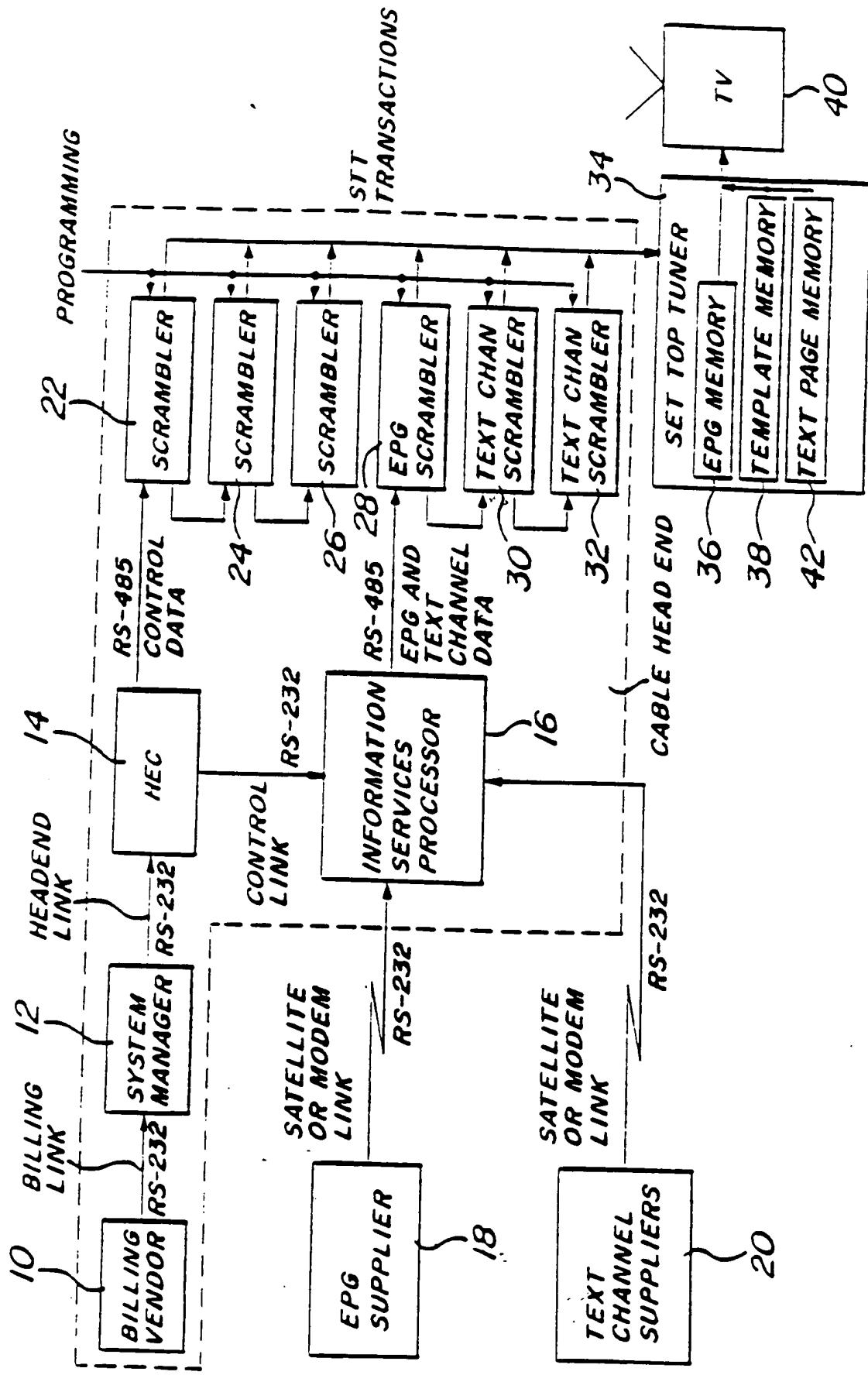


Figure 28

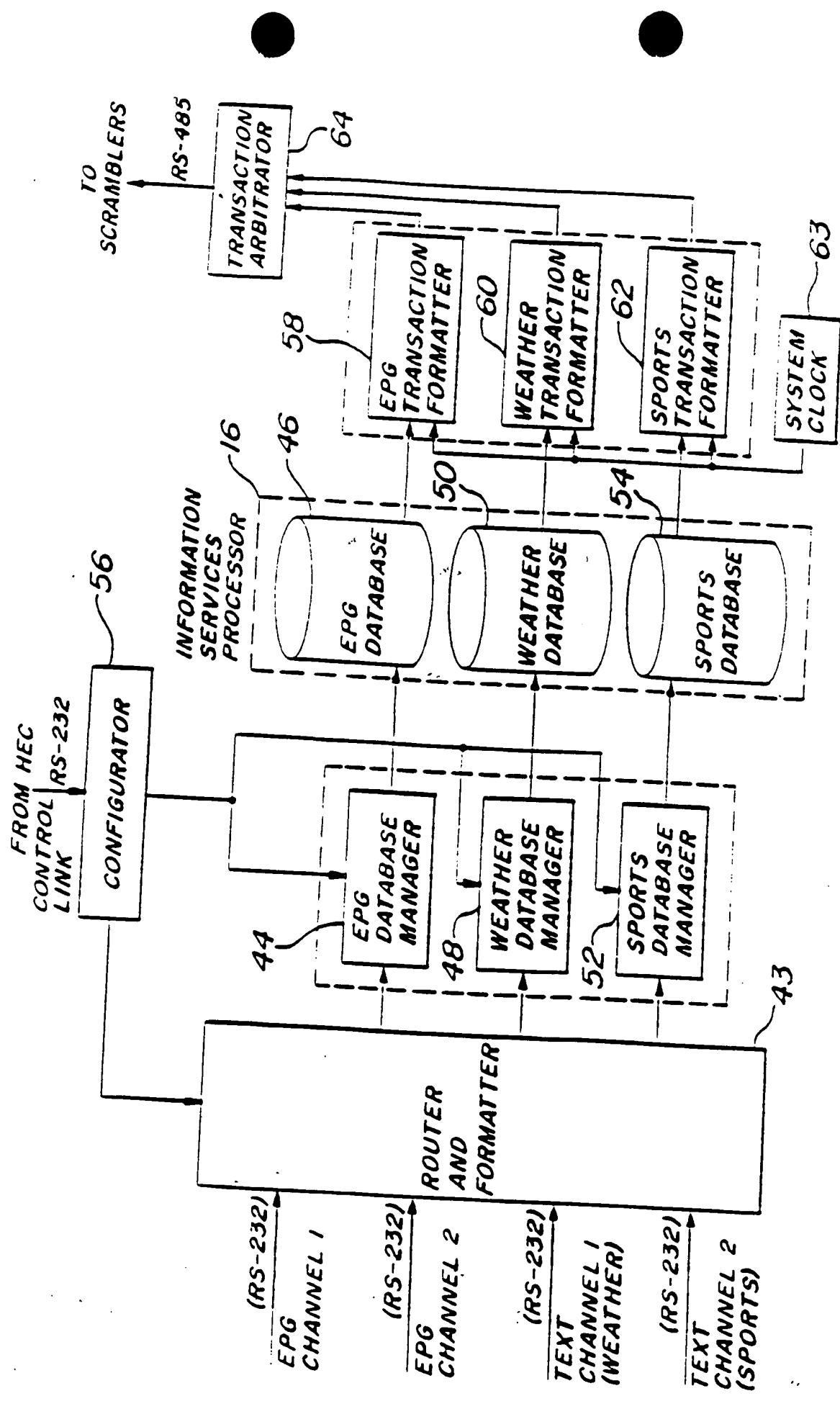


Figure 29

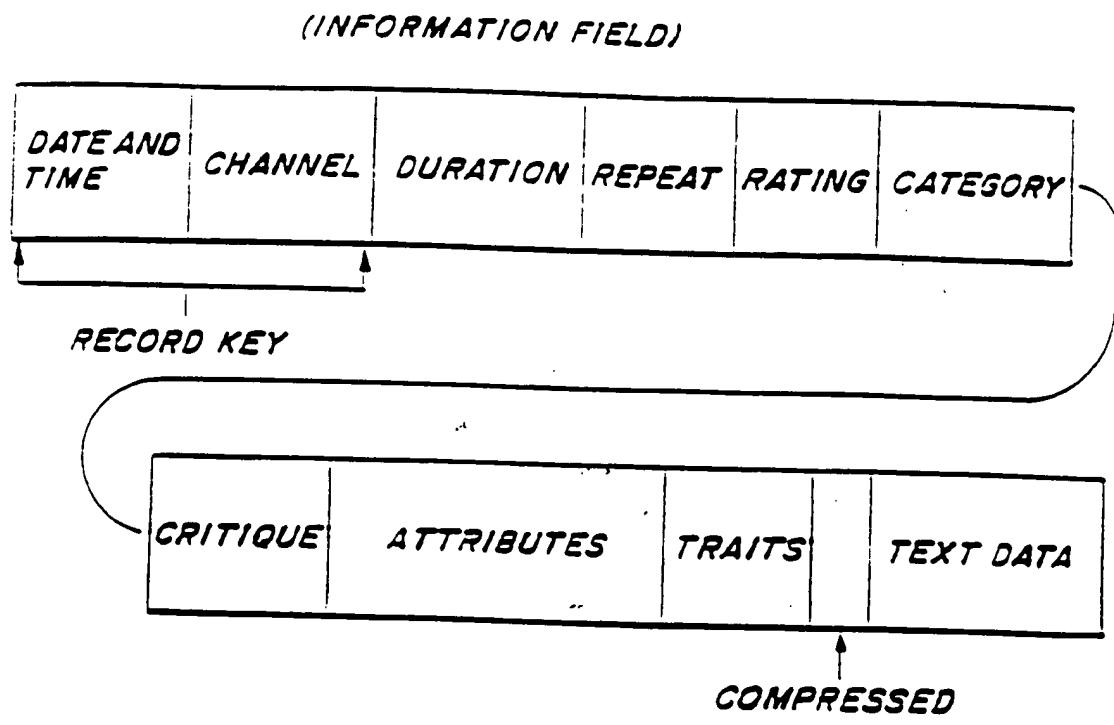


Figure 30

(TO SCRAMBLERS)

BEGINNING FLAG 1 BYTE	STATION ADDRESS 1 BYTE	CONTROL 1 BYTE	INFOR- MATION FIELD <i>n</i> BYTES	FRAME CHECK 2 BYTES	ENDING
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Figure 31

EPG TRANSACTION FORMATTER 58

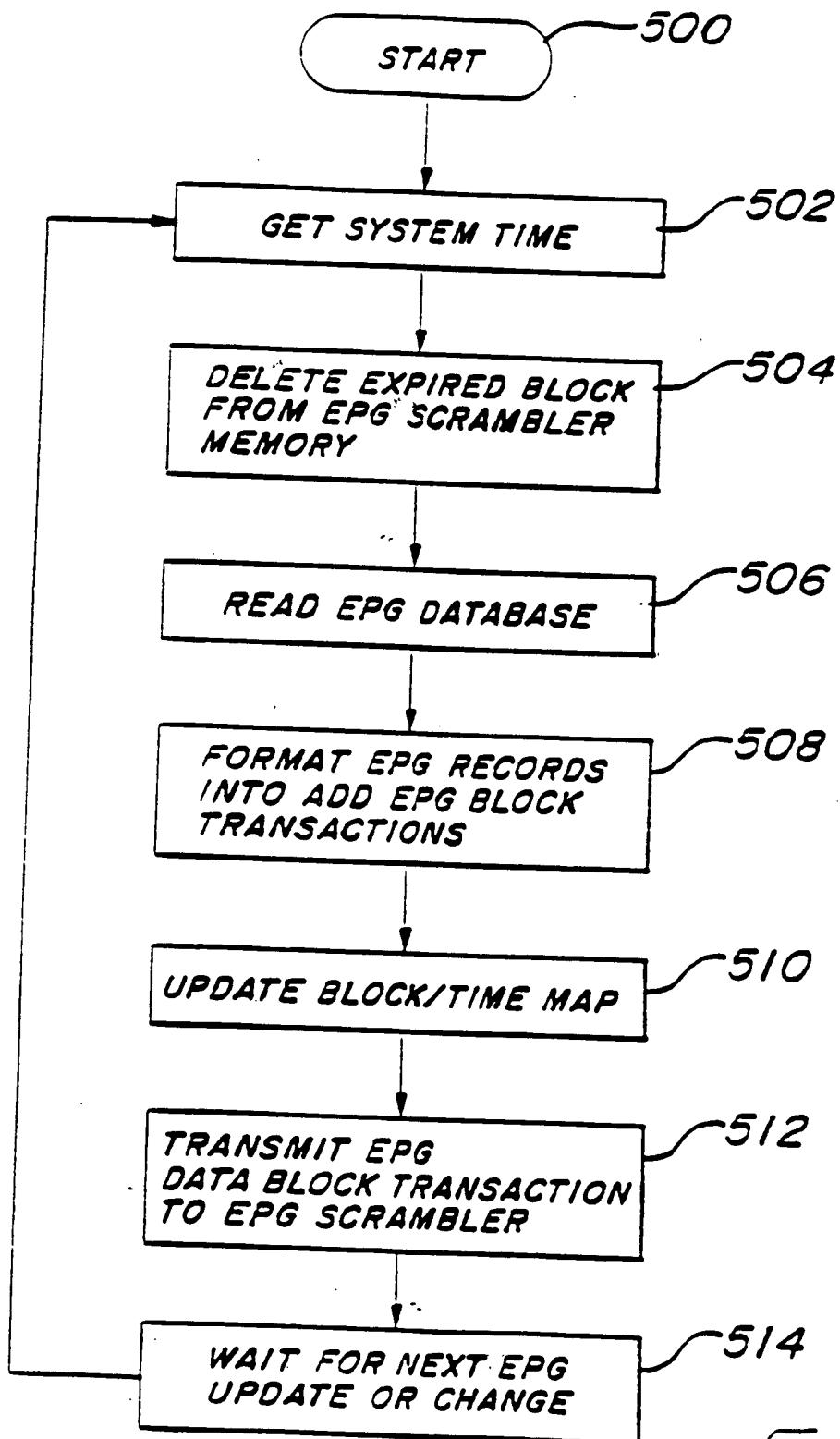


Figure 32

TEXT CHANNEL TRANSACTION FORMATTER 60,62

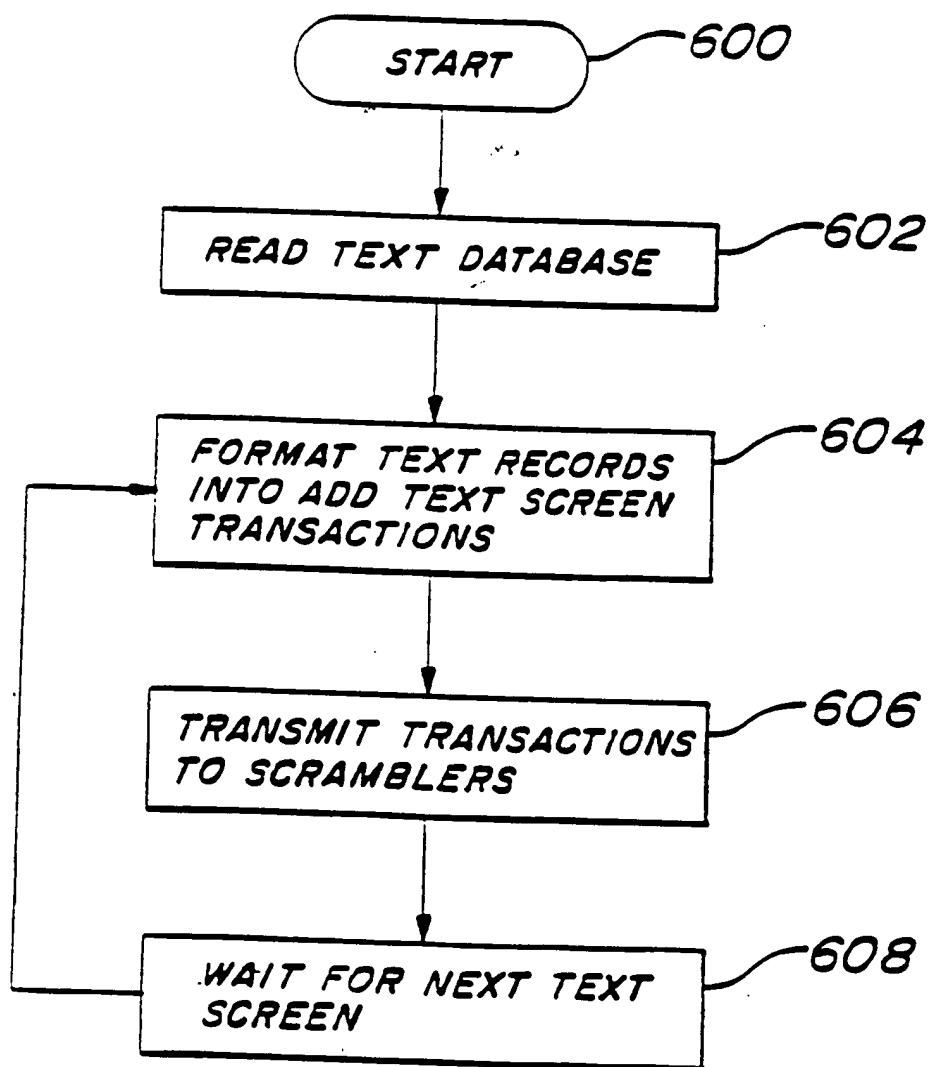


Figure 33

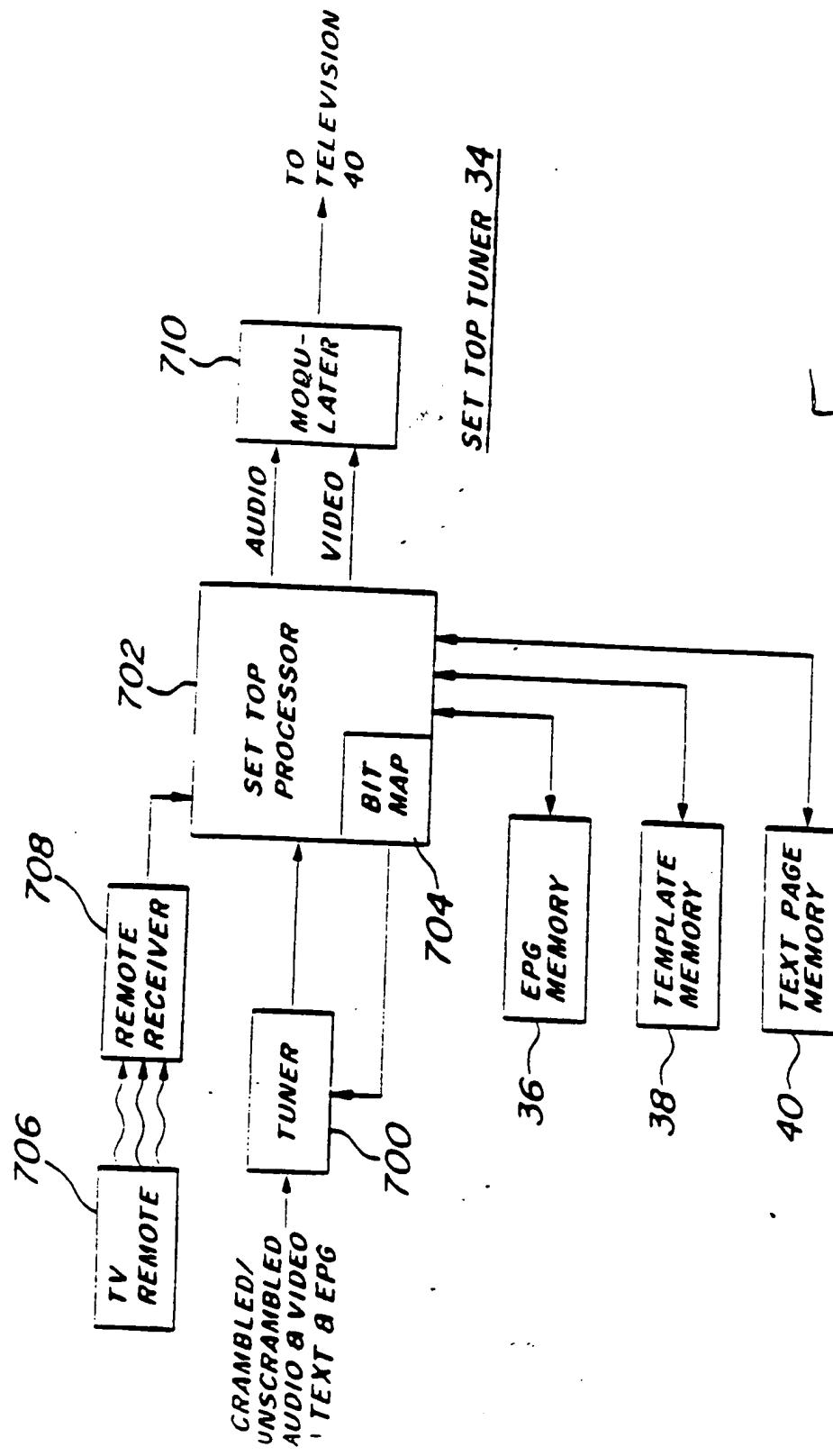


Figure 34
11

Process for automatically creating multiple profiles and
automatically identifying currently active profiles

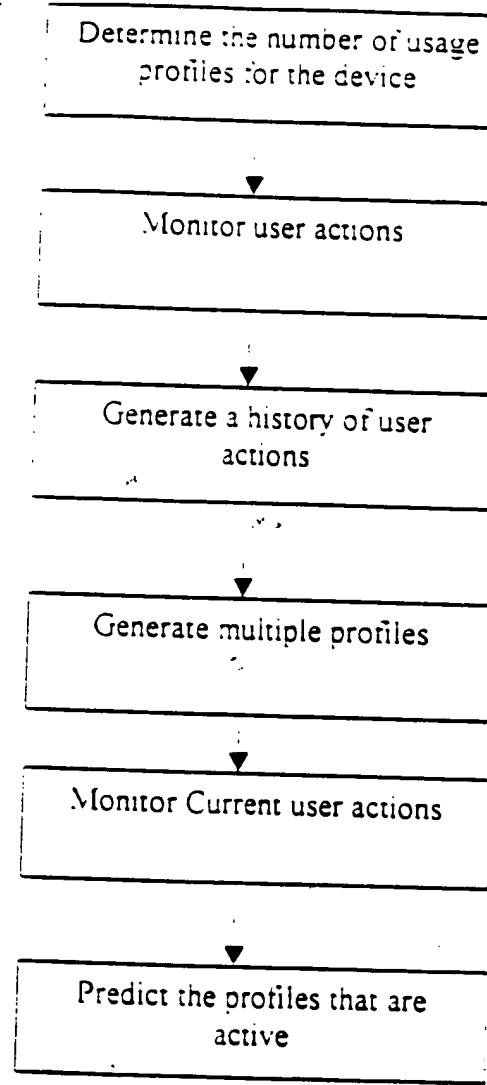


Figure 35

Process for generating multiple profiles

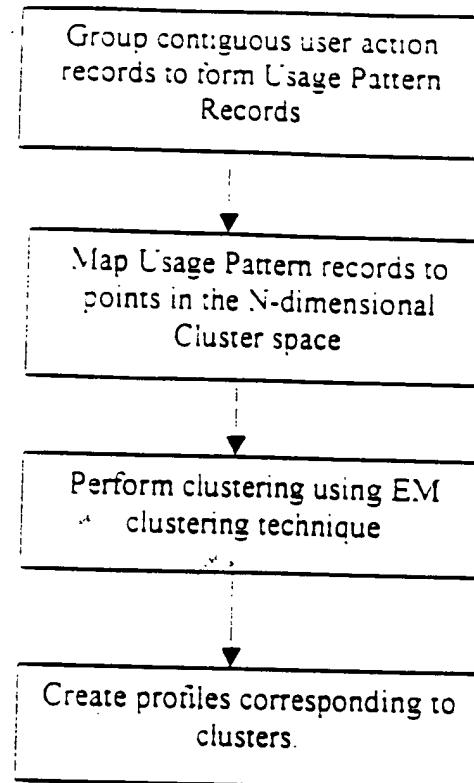


Figure 36

Acuon
StartTime
EndTime
Parameters

Channel Change
38720100
38720110
NBC

B) Format of user action record

Number of Action records
Action record 1
Action record 2
•
•
Action record N

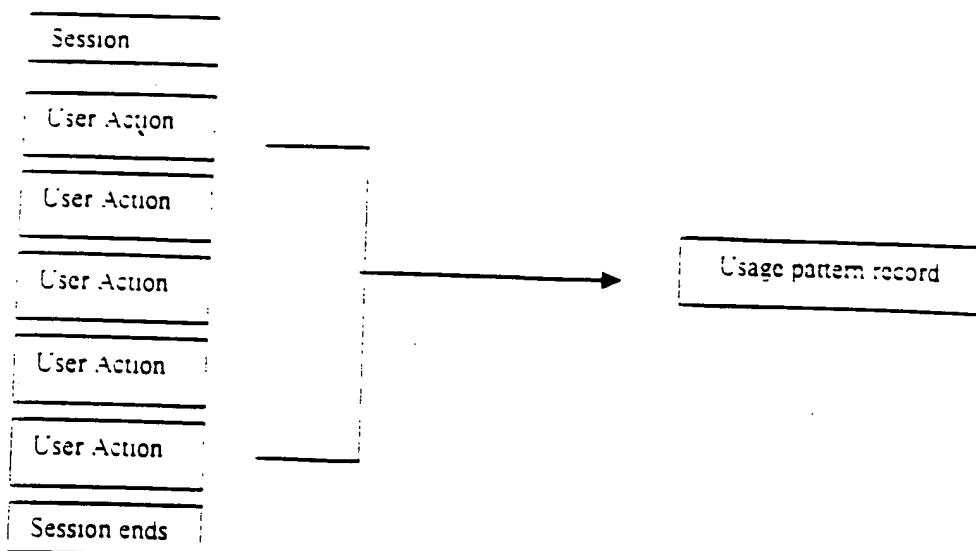
B) Example of user action record

Number of Action records
Action record 1
Action record 2
•
•
Action record N

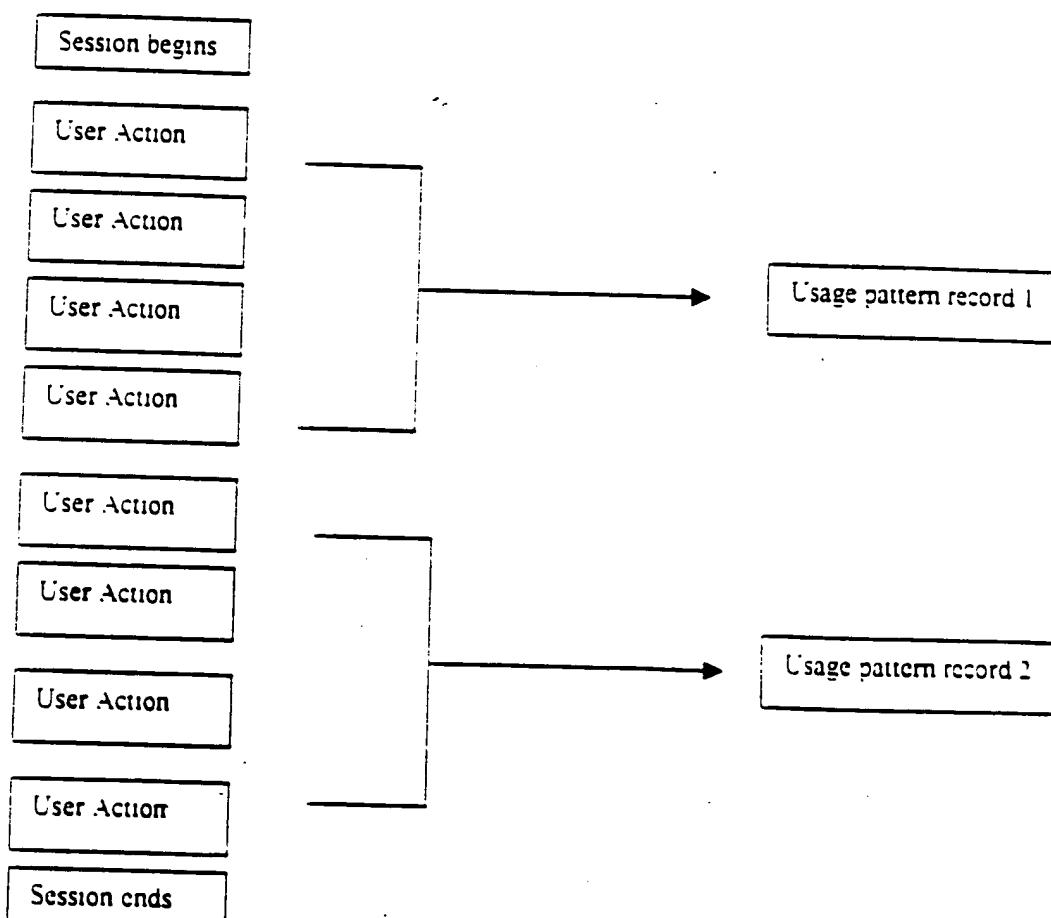
C) Format of History database

D) Format of Usage pattern record

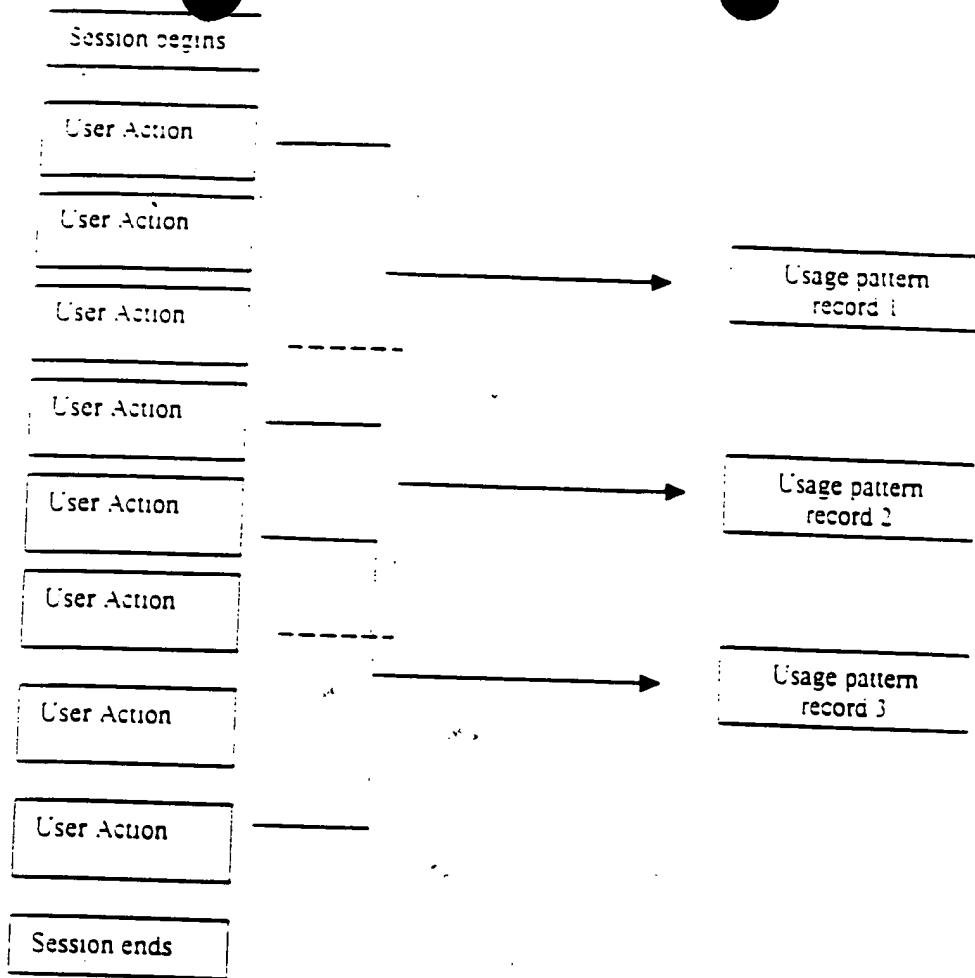
Figure 37



A) One method for creating usage pattern



B) One method for creating usage pattern



One method for creating usage pattern record

Figure 39

Process for Predicting currently active profiles

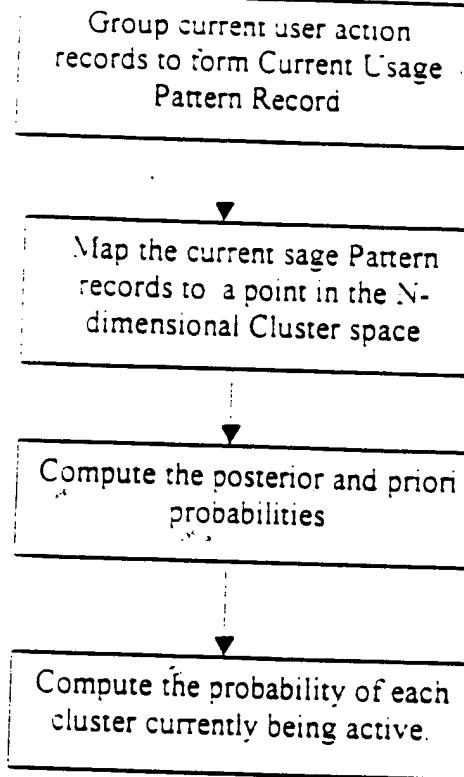


Figure 40

Profile Creation using Generated Clusters

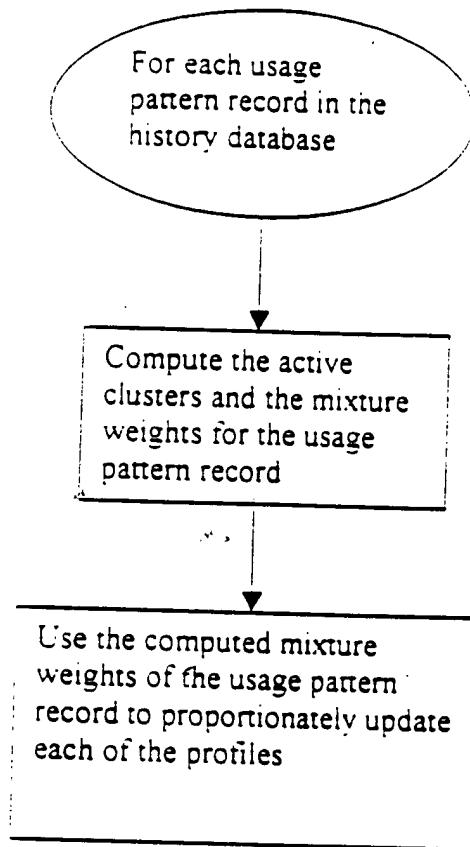


Figure 41

Targeted Electronic Content Distribution without compromising privacy of users

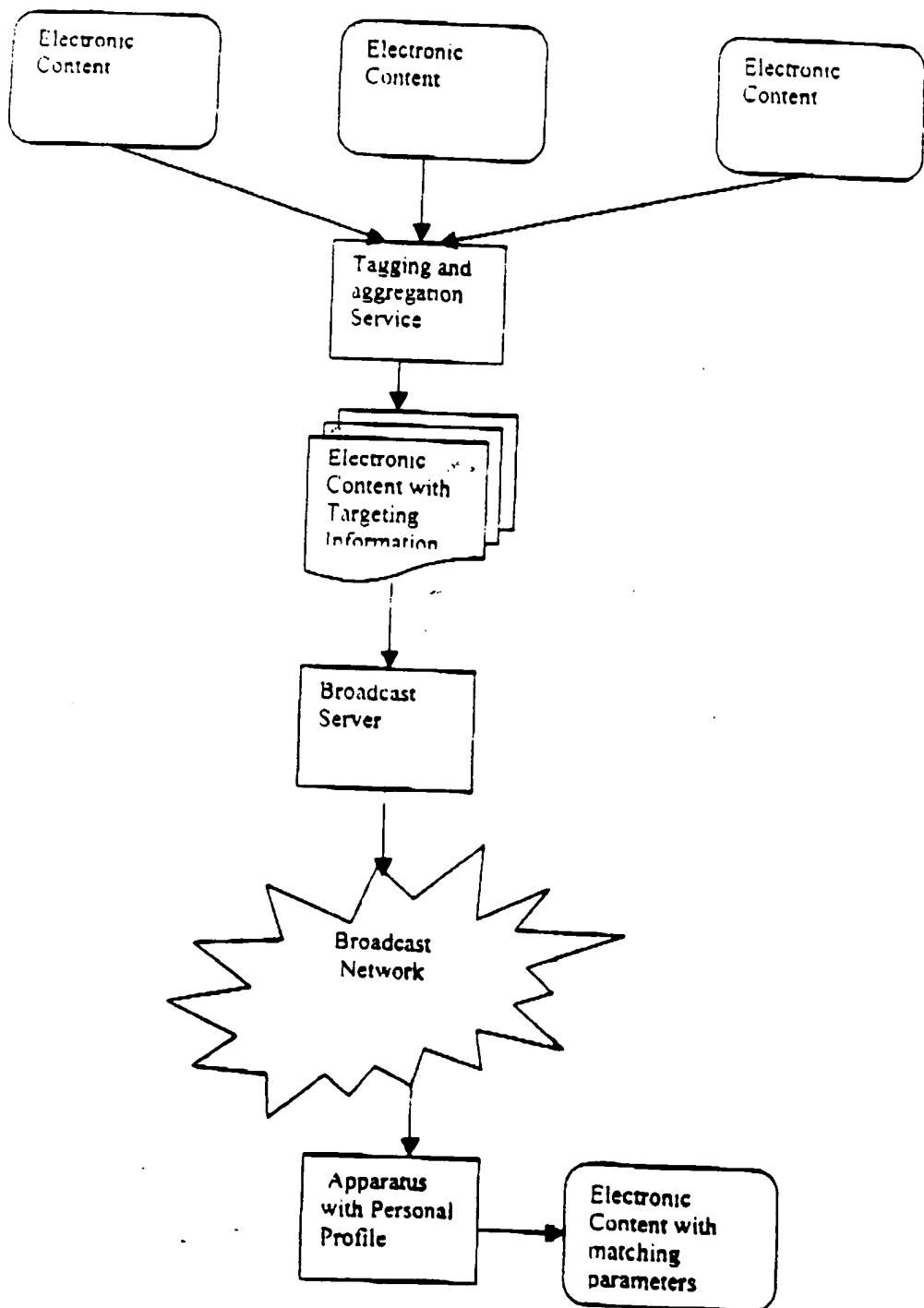
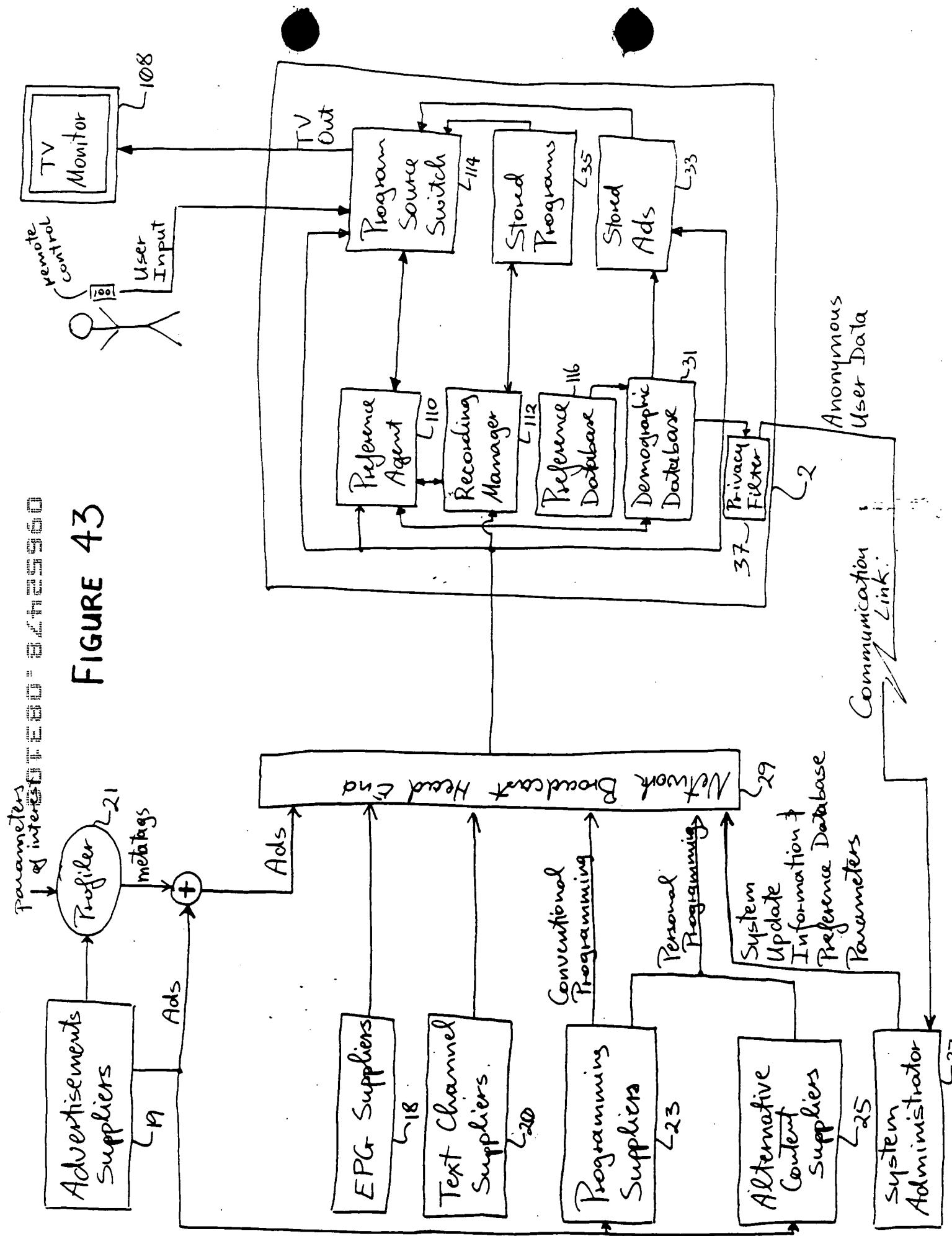


FIGURE 42

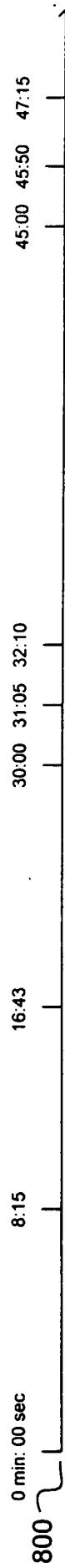


Conventional Linear Programming

Scene 1	Scene 2	Scene 3	Ad 1	Ad 2	Scene 4	Ad 3	Ad 4
---------	---------	---------	------	------	---------	------	------

850 0 min: 00 sec

Timeline



Customized Linear Programming

Scene 1	Scene 2	Scene 3	Ad 1	Ad 2	Scene 4	Ad 3	Ad 4
	Scene 2a	Scene 3a	Ad 1a	Ad 2a		Ad 3a	Ad 4a
		Scene 3b	Ad 1b	Ad 2b		Ad 4b	
			Ad 1c	Ad 2c			



Customized Linear Programming with Variable Scheduling

Scene 1	Scene 2	Scene 3	Ad 1	Ad 2	Scene 4	Ad 3	Ad 4
	Scene 2a	Scene 3a	Ad 1a	Ad 2a		Ad 3a	Ad 4a
		Scene 3b	Ad 1b	Ad 2b		Ad 4b	
			Ad 1c	Ad 2c			



Figure 44.